Trains

May
1944

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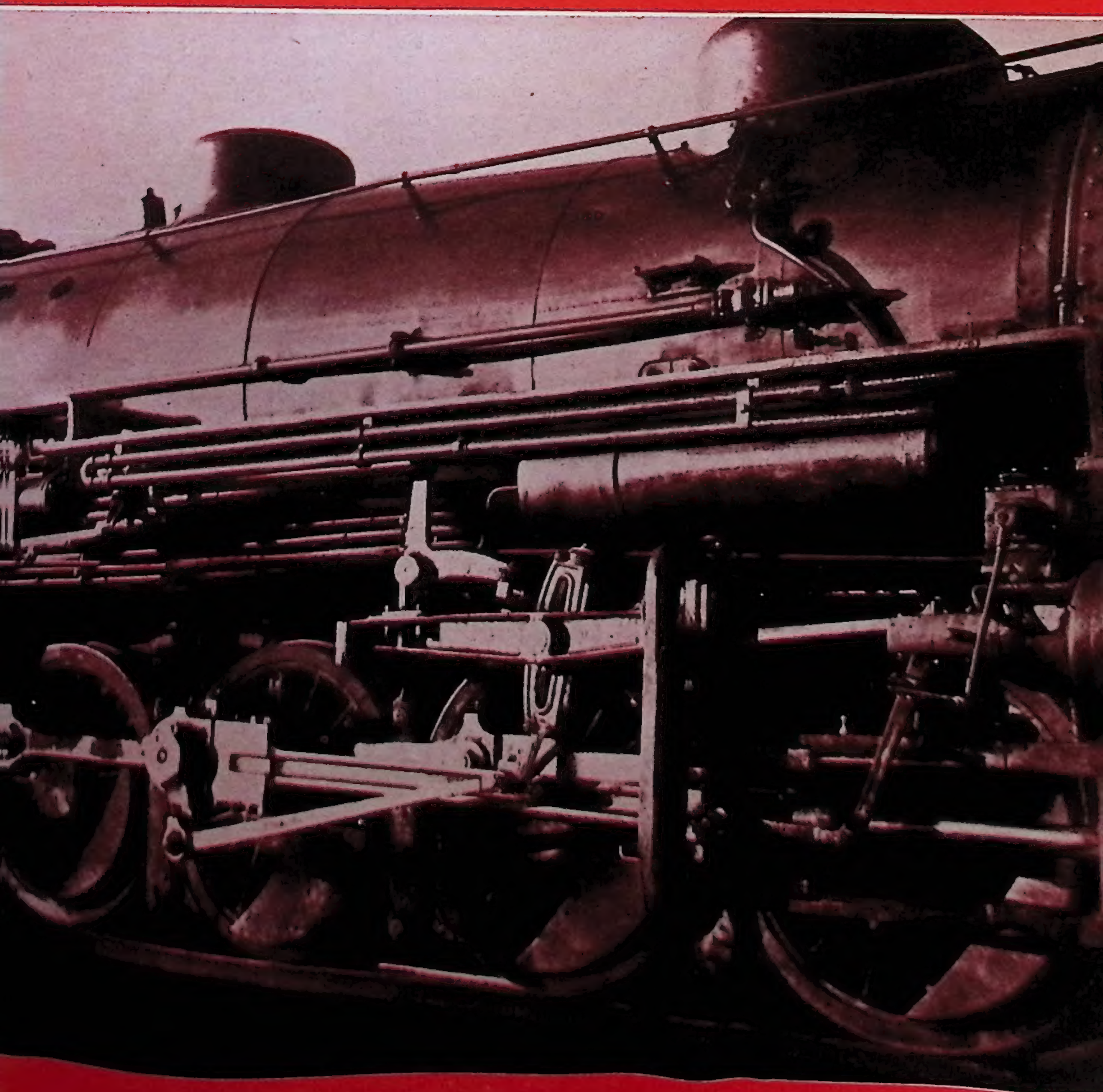

Trains

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AT an unusual trackside ceremony April 10 in Lincoln, Neb., the Burlington's *Pioneer Zephyr* cut its own birthday cake. In more ways than one, this year marks the tenth anniversary of the streamlined train. On April 9, 1934, the *Zephyr* took to the rails, first Diesel-powered and first stainless-steel streamliner. And on February 12 of that same year it had been preceded by the Union Pacific's aluminum-alloy, distillate-engined streamliner M-10000.

Thus began the two principal competitive lines of streamlined cars, for the *Zephyr* was built by Edward G. Budd and marked his entrance into the railroad equipment field, while the M-10000 was built by the long-established Pullman-Standard Car Manufacturing Company.

The significance of what happened 10 years ago lies not in the lightweight car, for that had been developing since Pullman built suburban cars for the Illinois Central in 1923, using aluminum alloy to cut weight by four tons per car. Nor does it lie in the use of Diesel power, important though that development was in its own right, for streamlined trains have used other types of power quite as successfully.

What did happen 10 years ago was the change in shape of the railroad car and train. It was the change in shape which convinced the public that here was something really new. It was the change in shape which gave new hope to the railroad passenger business and visions of a brighter future to the general public, at a time when the outlook was gloomy indeed.

The two principal competitive passenger-car lines, Budd and Pullman, have now simmered down to four general types of passenger car. Budd design is based upon the primary concept of using stainless steel not only as a bright attention-attracting surface, but also as a basic structural material because of its high tensile strength. The high cost of stainless steel, however, makes the Budd-built cars somewhat more expensive. Pullman has three basic types of car, the lightest of which is of aluminum alloy with riveted construction. These aluminum cars are of the girder design which through many years has been gradually developed as the most widely used type of passenger-car engineering. The side plates of the car act as part of the web of a girder and they are fairly thick so as to take the vertical strain.

The Pullman stainless-steel sheathed car is built on a frame of low-alloy high-tensile steel, the stainless steel being purely a shell for appearance purposes. Because the stainless-steel section is too thin to take the side stresses of the girder type of construction, the side framing is designed in the form of a truss, the same type of basic engineering employed in the Budd-built all-stainless-steel cars. Pullman's low-alloy car with the stainless-steel shell is some 7 per cent heavier than the riveted aluminum-alloy car.

Most widely used of the new types of passenger car is the standard girder type built of low-alloy steel with all-welded construction. This type of car is about 8 per cent heavier than the aluminum-alloy design.

Back of all the progress in decreasing the weight of passenger cars lies an utterly new concept of railroad car design. Twenty years or more ago the designing engineer regarded weight as a perfectly proper and necessary complement to good design. He simply added more steel wherever he was the least bit doubtful about the strength of the car. It might be said that he substituted tonnage for careful engineering. Now it is realized that excess weight may, in itself, not only be expensive but unsafe, and every aspect of a design is carefully engineered down to very close limits so that the design, while meeting strength specifications in every part, has no excess weight to carry around on its back.

THE highest standard-gauge railroad in the country has been abandoned. The I. C. C. has authorized the Rio Grande to close its branch from Leadville to Ibex, Colo., which reached an elevation of 11,512 feet above sea level. The title now passes to the nearby Leadville-Climax Branch of the Colorado & Southern, recently changed from narrow to standard gauge. The elevation at Climax mine is 11,465 feet.

A. C. Kalmbach.

May, 1944

Volume 4 Number 7

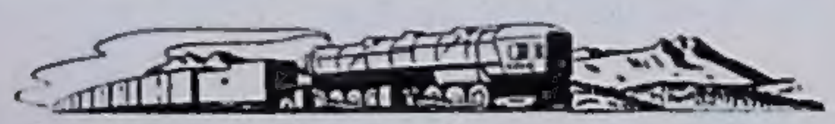
Los Angeles Union Station. *By Wayne Leeman.* - 4
I've Been Riding the Pullmans. *By Roy Clark.* - - 6
Empire Builder at Marias Pass. *A photo story.* - - 10
Grass Roots Railroad. *By Henry P. Eighmey.* - - 16
Railroads of Italy. *By Arthur L. Stead.* - - - 20
Way Station. *A painting by A. Sheldon Pennoyer.* - 24
Southern Pacific Veteran. *Photos and specifications.* - 27
Railroads of Maryland. *By E. L. Thompson.* - - 28
The Man in the Tower. *By Edward Hungerford.* - 40
A Ton of Tools. *By Roy L. Martin.* - - - 42
Trackage Rights. *A quiz.* - - - - - 44

Cover photo by Varney J. Vedders.

Hitchhiking over the Sierra

From north to south the huge mountains stand there like a crinkled pie crust rim magnified a million times.

These are the snow-capped Cascades, ranging down through Washington and Oregon . . . the peaks of the Sierra Nevada chain, which mark a towering boundary between California and Nevada . . . and then Sierra Madre, marching into Mexico.



To THE WEST beyond the mountains lies America's Pacific Coast with its ship-filled harbors. Beyond the harbors, across the ocean, lies Japan.

To meet and whip the Japanese in their home islands, great quantities of war equipment must be moved over the barrier mountains and down to ships.

Tanks, for example — like those pictured here hitchhiking over the Sierra. Cannon. Machinery. Trucks and motors.

The railroad is the only practicable way to transport these huge war tools.

ON ALL SOUTHERN PACIFIC ROUTES there are mountains to be climbed, for our lines cross more mountain ranges than any other railroad.

S.P. routes converge on West Coast harbors from Chicago through El Paso on the Rio Grande, and through Ogden across Great Salt Lake . . . from New Orleans in the deep South and from the Pacific Northwest.

As any railroader can tell you, it takes more locomotives to move the heavy war trains up steep mountain grades. It requires experience and skill to bring them safely down. Day and night our locomotives thunder through the passes. A railroad toiling in the mountains to bring through its great freight loads is one of the inspiring sights of this war.

IN ADDITION to military equipment, S.P. is moving trainloads of troops. Materials for the West's new industries. Foods, lumber, oil, copper and cattle to meet the needs of factories and families all across the country.

Because of our war load, and the diversion of equipment to military use, we are not able to take care of everyone who wants to travel. Our service is not up to normal peacetime standards.

When you take the train under present conditions — or when you cannot get a reservation—we hope you'll feel confident that the railroads, management and men, are working wholeheartedly at their war job. We hope you'll realize that the railroads are handling a great load successfully despite many difficulties.

S·P

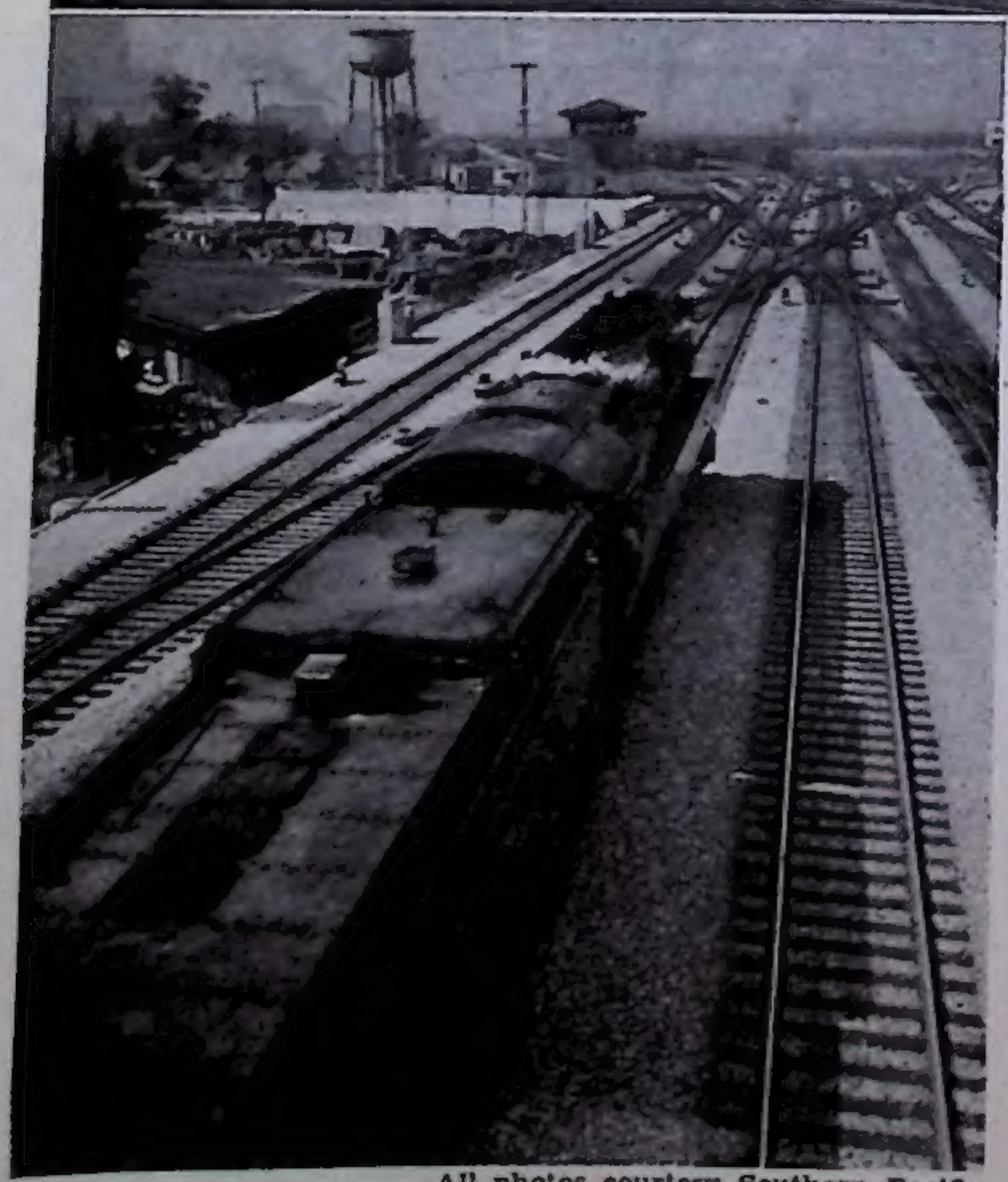
The friendly Southern Pacific

HEADQUARTERS: SAN FRANCISCO

One of America's railroads—ALL united for Victory!

Los Angeles Union Station

By Wayne Leeman.



All photos courtesy Southern Pacific.

A Southern Pacific train on the throat tracks immediately to the north of Los Angeles Union Station.

Los Angeles, fifth largest city in the United States, is served by only three railroads: Union Pacific, Southern Pacific, and Santa Fe. This in itself is unusual for a city of 1,800,000 inhabitants. Even more unusual is the fact that the shortest run made by any train leaving crowded Los Angeles Union Passenger Terminal is 60 miles. All but seven trains from the station go at least 470 miles. And every Union Pacific train leaving the terminal—four in all—is bound for Chicago.

Compared with the average American city of a million population, Los Angeles is served by a small number of trains. The number of ultimate destinations is limited. And departure times, like California grapes, come in bunches.

On the modernistic train board in the station are listed 29 trains, the number of regularly scheduled passenger runs operated by the big three. Of the 29, three are extra-fare, super-service units that leave and arrive either twice weekly or 10 times a month. There is a thirtieth train that leaves from the station daily, but

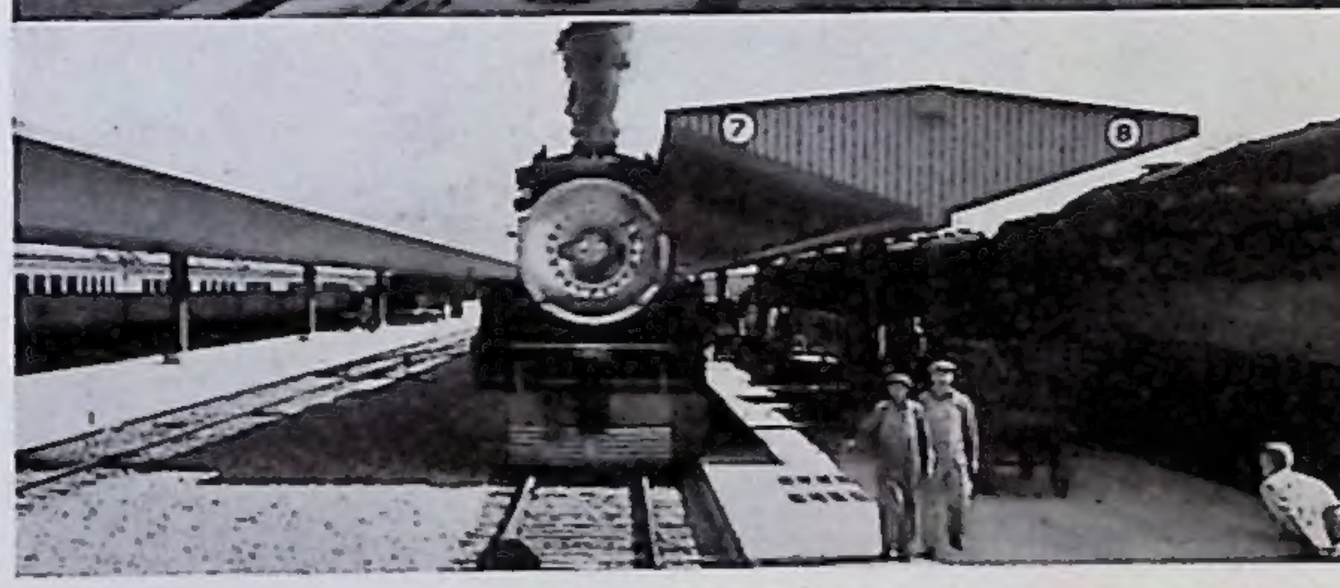
which isn't listed on the board. This is Santa Fe 8, a merchandise special for Chicago that carries few if any passengers in its 12-seat combination car at the end of as many as 18 mail, baggage and express cars.

Anyway you look at it, that leaves only 26 daily scheduled departures, which on its face seems like a rather small total for a city of this size. It is, for instance, one less than the number out of St. Louis (with about half the population) for only two points: New York and Kansas City. Of course there are extra sections, just as there are from any other rail center with which comparison might be made.

It is a railroad truism that an important part of service is delivery to destination without changes, layovers and delay. So it is that trains out of Los Angeles really put in the miles per run. Almost half—13 of the 30, or 43 per cent—chug out of the land of sunshine for one ultimate destination: Chicago.

Of the remainder of the 30 daily trains, seven, or 23 per cent, leave for San Francisco (all on the Southern Pacific, of course) and five (16 per cent) are Santa Fe runs to San Diego. Two are locals to San Bernardino, Calif., 60 miles away by the closest route and where the Santa Fe has extensive shops; two are for New Orleans; and one is for Portland, Ore., via the San Joaquin Valley line of the SP.

When any of Los Angeles' 1,800,000 sun-bathed citizens convince themselves that their trip *really* is necessary, the chances are that most of them will board their train between 7:30 a. m. and 9 p. m., for between those hours all but three of the 30 take off. The exceptions are all on the Santa Fe: No. 8, the *Fast Mail* for Chicago, due out at 10:30 p. m.; the *Grand Canyon Limited*, also for Chicago at 12:15 a. m.; and the local for San Diego at 12:30 a. m.

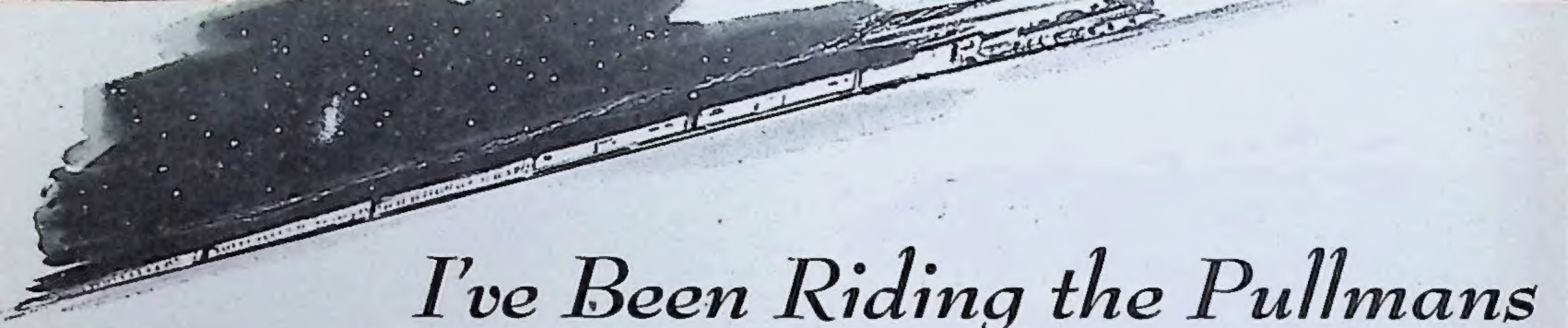


Both interior and exterior of the Los Angeles Union Station, newest of the country's great terminals, are done in California Mission style. The platform canopies are modern in their simplicity.

30 trains leave Los Angeles daily.

Table No.	Railroad	Train No.	Train Name	Departure	Destination	Mileage
1.	SF	24	Grand Canyon Limited	12:15 a. m.	Chicago	2242
2.	SF	42	Local	9:50 a. m.	San Bernardino	60
3.	SF	54	Local	5:20 p. m.	San Bernardino	72
4.	SF	4	California Limited	6:30 p. m.	Chicago	2257
5.	SF	2	Scout	7:15 p. m.	Chicago	2241
6.	SF	8	The Fast Mail*	10:30 p. m.	Chicago	2227
7.	SF	22	El Capitan†	11:30 a. m.	Chicago	2227
8.	SF	20	Chief	12:01 p. m.	Chicago	2227
9.	SF	18	Super Chief‡	6:00 p. m.	Chicago	2227
10.	SF	70	San Diego Local	12:30 a. m.	San Diego	128
11.	SF	72	San Diegan	7:20 a. m.	San Diego	128
12.	SF	74	San Diegan	12:01 p. m.	San Diego	128
13.	SF	76	San Diegan	3:15 p. m.	San Diego	128
14.	SF	78	San Diegan	8:15 p. m.	San Diego	128
15.	UP	24	Pacific Limited	7:30 a. m.	Chicago	2299
16.	UP	38	Los Angeles Limited	5:30 p. m.	Chicago	2299
17.	UP	8	Challenger	6:35 p. m.	Chicago	2299
18.	UP	104	City of Los Angeles§	4:30 p. m.	Chicago	2299
19.	SP	71	Local	1:00 p. m.	San Francisco	470
20.	SP	2	Sunset Limited	8:30 a. m.	New Orleans	2004
21.	SP	44	Californian	3:30 p. m.	Chicago	2273
22.	SP	25	Owl	5:00 p. m.	San Francisco	483
23.	SP	59	West Coast	5:30 p. m.	Portland	1128
24.	SP	6	Argonaut	6:45 p. m.	New Orleans	2004
25.	SP	69	Coaster	6:30 p. m.	San Francisco	470
26.	SP	55	Local	8:25 p. m.	San Francisco	483
27.	SP	4	Golden State Limited	6:30 p. m.	Chicago	2273
28.	SP	75	Lark	9:00 p. m.	San Francisco	470
29.	SP	99	Morning Daylight	8:15 a. m.	San Francisco	470
30.	SP	51	San Joaquin Daylight	8:00 a. m.	San Francisco	483

* Carries few if any passengers. † Semiweekly extra-fare coach train. ‡ Semiweekly extra-fare Pullman train. § 10-times-monthly extra-fare train.



I've Been Riding the Pullmans

By Roy Clark.

"FROM Natchez to Mobile, from Memphis to St. Paul" I've been riding in Mr. Pullman's cars for over 35 years. I've had *Blues in the Night,* and then I've had other nights of delicious oblivion, when I haven't heard a thing from Chicago to Minneapolis or from Atlanta to Jacksonville.

I've slept in Pullman sleepers so long that I find myself carrying out Pullman habits when occupying my half of the family bedroom at home. Just the other night, noticing that no upper was lowered over me, I got up and gave my wife $1.60, remarking that travel was getting mighty light again when one could get the whole section. One time I commented about my shoes not being properly shined in the morning, but I've never made that mistake again. Some of my other Pullman habits seem to irritate friend wife, particularly the one of calling the bathroom the washroom, and the other of throwing my discarded towels in the corner.

But habits stick, after riding Pullman cars since the days when narrow vestibules and those ornate Pintsch gas lights were the last word in luxury. Why, I can even remember when the porter would leave the upper berth up, if no one was over you and you wanted it up. And it didn't cost $1.60 extra, either.

I've lolled in the luxury of the *Twentieth Century Limited,* and I've ridden the colonist sleeper that used to be attached to the mixed train operating between Hudson Bay Junction and Churchill, 'way up in Northwest Canada. I've had uppers, lowers, sections, enclosed sections, roomettes, bedrooms, compartments, drawing rooms—even those new and almost civilized upper berths with the little windows in them. I've sampled about everything that Mr. Pullman has had to offer in the past 30 to 40 years.

I'm not a professional railroader, but I believe that I can qualify as a darned good amateur. I can talk about American types, Berkshires, Moguls, Mountain types, Pacifics and Shays with the best of them. I can recall every detail of those clean-limbed Ten-Wheelers the old Lake Shore proudly used on its hotshot strings of varnish; and I rode in the cab on one of the first "front-enders" the SP operated over the Sierras. You can't ride the rails for 35 years, even on the cushions, without having quite a bit of railroading stick to you, particularly if you like it.

Lots of things can and do happen to a Pullman passenger when traveling from Portland, Me., to Portland, Ore., and from International Falls, Minn., to Miami, Fla. In retrospect, I often laugh at these incidents. Maybe a couple of them will amuse you, too.

My first Pullman trip was made at the age of six, when my father took me from Chicago to New York on the old Lake Shore - New York Central. We went there to meet my aunt, who was arriving by steamer from Ireland.

Having duly disengaged her from the clutches of the customs people at the steamer slip, and having spent a little time showing her New York City (the Flatiron Building was then the world's eighth wonder), we all went aboard a Chicago-bound train at the old Grand Central. My aunt's previous railroad experience had been restricted to a couple of rides on a little narrow-

Illustrations by Don Bert.

gauge in Ireland, and our Pullman and dining cars left her agog with amazement.

When bedtime came she refused to undress, saying that she would never trust a mere curtain between her and all those men in the car. I suspect that she slept but little that night, because it was very early in the morning that she called my father and asked him if his shoes were under his berth. My father said they were.

"It's a good thing, my lad, that I didn't sleep at all at all last night," she said. "Whilst you were sound asleep that Negro came up and started to lay hold of them. But I stopped him."

"What did you do, Nellie?" my father asked.

"Sure, and I said, 'Drop 'em, I see you!' and the rapscallion sneaked away without getting them."

That was 45 years ago, and Joe Miller has written a lot of Pullman jokes since then. Many of them probably never happened, but lots of funny things actually do happen on Pullman sleepers, even in these sophisticated days. Witness this incident on the *Piedmont Limited* into New Orleans a few weeks ago:

Two big, burly individuals got on at Atlanta. Subsequent talk developed that they were ship welders, being transferred from Savannah to New Orleans. They told me that they had never been on a sleeper before, and they were greatly nonplussed as to where the beds were coming from.

When the porter started making up the berths they were all eyes. They marveled at his dexterity and they traveled down the car with him as he made up berth after berth. They invited me to join in their amazement, which I gladly did; and, because I hadn't taken the trouble to watch a porter make up berths for years, I honestly became imbued with their enthusiasm, too. All of us take too many things for granted. Incidentally, the brawny travelers tried to enlist the interest of a very grand and reserved lady in the car, who knew that she was grand and reserved but also knew that she definitely wasn't interested in the technique of making up berths. That was the only awkward incident in our evening's research work.

When their own upper berth was first let down and before the porter could arrange the bedding, one of the welders climbed up to it, remarking:

"Boy, this here bunk looks good to me. Me for the hay right now."

The porter got him down again, explaining that nice, white sheets and soft blankets were to be added, and that he could undress just as he did at home.

"The devil you say!" the welder marveled. He thereupon brought out of his bag one of the gayest pair of pajamas it has ever been my good fortune to see. "Boy, look at these!" he said to me. "Bought them in Atlanta today and they get christened in this here upper bunk. I'm sure ridin' swell."

A little later my two friends climbed into their section, closed the curtains, and I didn't expect to hear from them until morning. Having a good story to read, I also retired early in my own "bunk." In a little while I heard a noise out in the aisle that sounded exactly as though someone were spitting tobacco juice, although I knew it couldn't be that. I stuck my head out of the curtains and watched for a minute.

Soon my welder friend in the upper berth popped his head out of the curtains, pursed his lips, and shot a modest little stream of tobacco juice down to the floor. He was obviously trying to do a refined job under the circumstances.

"I always like a little chew before I go to sleep," he said to me in a confidential way, "and they ain't got no spittoon up here."

Here's another one—just the reverse—that happened on the Pullman attached to the extremely local train operating from Portland to Grant's Pass, Ore., on the SP. In the summer

this car is crowded with tourists making what is called the "Redwood Tour": by train to Grant's Pass, thence by auto stage through the redwoods to Eureka, Calif., and thence into San Francisco via the night train on the Northwestern Pacific. It is a picturesque and interesting way to make the trip between Portland and San Francisco, but it definitely is not the fast nor the de luxe way.

On this particular trip, not in the tourist season, the usual motley occupants of the car at the Portland terminal were enlivened by the entrance of a very grand middle-aged lady, lorgnette and all, accompanied by two young ladies. Their accent, plus their 19 pieces of baggage—by actual count—clearly identified them as Englishwomen. And they were very, *very* English, if you get what I mean. They and their baggage filled their two sections to overflowing, and they were obviously and vociferously unhappy about the whole situation.

"My word, what beastly congestion!" the aristocratic matron exclaimed. "My man [to the porter], get us better accommodations."

"Please, ma'am," said the flustered porter, "that's your space you've got now. We have only one car on this train and all the other berths is taken. And we ain't got no lounge car."

"My word!" the haughty lady said. "In that case we'll go to bed right away. Is this the space we sleep in? I've heard about these trains in the States, but this is my first experience."

"O. K., ma'am," the porter replied. "I'll have to ask you to move whilst I makes up your berths."

"And where do we move to?" the lady asked. A fair question, at that, considering that every other seat in the car was taken.

"You ladies will find it real pleasant in the ladies' dressing room," said the porter, thus proving himself a master diplomat and salesman, considering the six-by-eight dimensions of the room in question. So, the aristocratic matron and her brood retired to the dressing room, remaining there until the porter told them that their berths were ready.

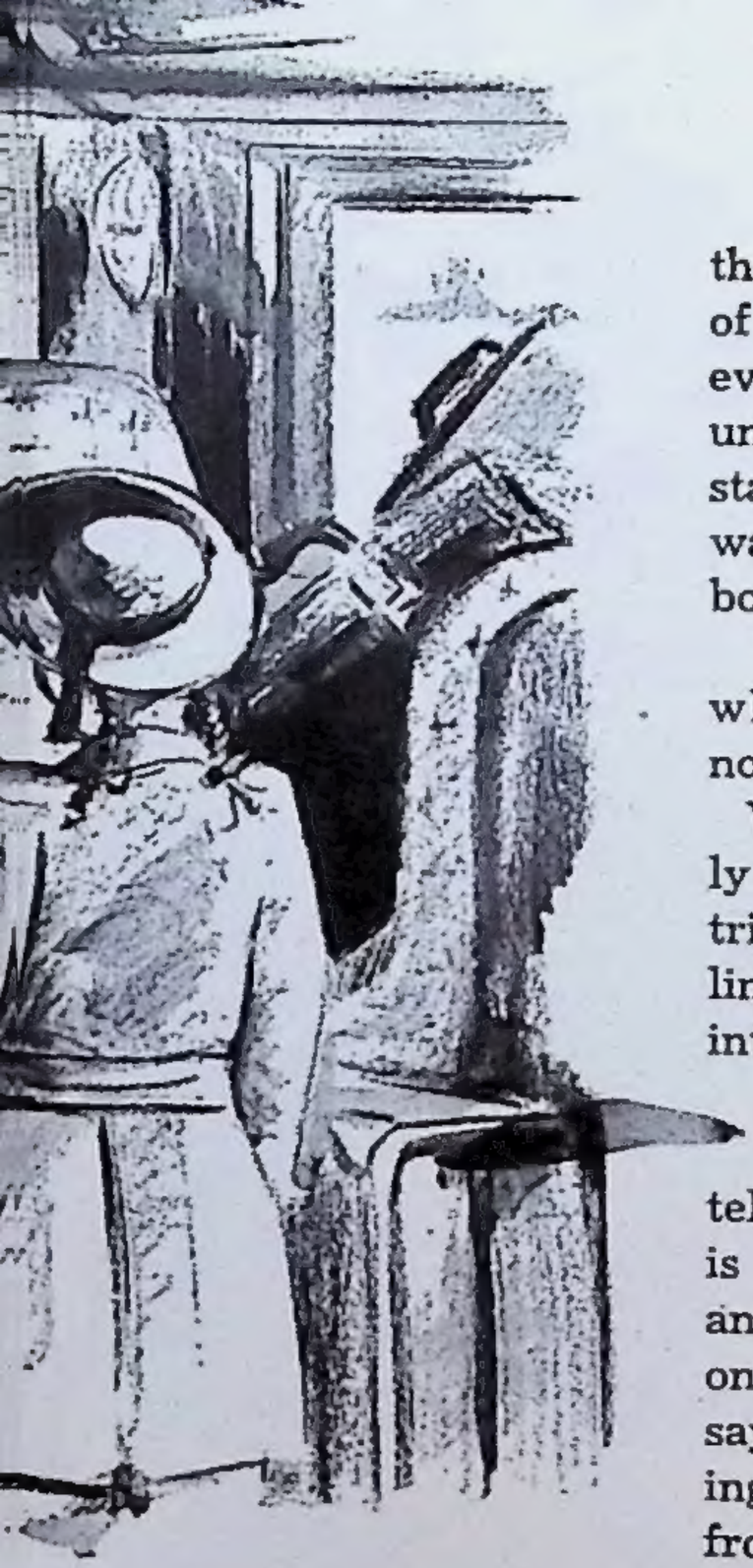
Eventually they retired, after sorting and resorting various and sundry pieces of baggage, each of which seemed vitally essential for the eight hours they were to be at rest. Peace and quiet settled on the car. But not for long. The matron had discovered the porter's call button, and here was something she knew about. She rang determinedly.

"Please have the gentlemen refrain from

smoking," she demanded. The porter explained that the obnoxious tobacco odors emanated from the smoking room at the end of the car, and suggested that she turn on the air-conditioning blower in her berth, at the same time demonstrating it. All was quiet again, but not for long.

"My man, would it be possible to have a spot of tea?" she asked when the porter answered her call. Mr. Pullman's indomitable servant explained that no refreshments were available. With a muttered remark that Americans certainly put up with beastly travel conditions, the worthy lady subsided for the night.

In the early cold mountain air at Grant's Pass, Mrs. Britisher, her daughters and her 19 pieces of baggage were deposited on the station platform. There she stood, a rugged British island in the center of her luggage, someway typifying



the invincible spirit of England under every conceivable untoward circumstance. Her head was bloody, but unbowed, as she said:

"My word, and what do we do now!"

What subsequently happened on her trip via the stage line, and how I ran into her two weeks later at the Biltmore Hotel in Los Angeles is another story, and an interesting one. Sufficient to say that, after riding the SP's *Lark* from San Francisco to Los Angeles, she had a much better opinion of American railroads. She was really a grand person and, if we are inclined to laugh a bit at her, we must remember that her first experience was definitely not on one of our better trains. I am sure that her later rides on the Santa Fe's *Chief* and the *Twentieth Century* sent her back to England a hearty booster for American railroads. The lady was bluff and hearty about everything she did.

Old-timers will remember that we had lots of travel congestion during World War I, too. I think it was as bad as, or worse than, what we are now experiencing. We had fewer Pullman cars then, we couldn't handle as many cars per train, and we just didn't have the "know-how" that we've developed in this emergency.

I recall a trip that I made from Louisville to Norfolk, on the C&O in 1918. Unable to get any kind of a berth, I was sitting in the smoking room around midnight. The only other occupant was a young fellow, obviously a country boy. We struck up a conversation, in the course of which he told me that he had Upper Seven in that car.

"Say, how do you get into those things?" he asked. "I'm afraid to climb in because I'll wake my wife underneath."

"So your wife's with you," I said, remarking that he looked pretty young to be a married man.

"Well, you see," he replied with obvious embarrassment, "we just got married today. We're on our honeymoon, going East to visit my uncle."

"On your honeymoon!" I exclaimed, a bright light dawning on me in connection with that Upper Seven. "This is no way to spend your wedding night—sitting here in a smoking room, or riding in an upper berth, either, for that matter. Your place is with your wife. I'll be glad to buy that upper from you."

"No, no, I couldn't do that!" he expostulated. "You see, we've never been on a sleeping train before, either of us, and it's our first night and —and—well, I just promised Helen that I'd sleep in the top bed tonight."

"Pshaw! Don't be overmodest," I argued, visions of that upper berth adding emphasis to my plea. "Thousands of folks go on honeymoons every year, and they always sleep in the lower berth. Anyway, it's way late and no one will see you. You go see your Helen right now. I'll bet the little girl is mighty lonesome, maybe scared, too, alone in that lower berth."

For a minute I thought that Helen and I had won. The young fellow got to his feet, paced the little room. Clearly he was torn between the logic and allure of my argument and his promise to Helen. I felt that I was as good as in Upper Seven right then. But after a minute he sat down determinedly.

"No, I'm going to sleep in the top bed," he declaimed with an air of finality.

So I found the porter's ladder for him, helped him put it up, saw him to his solitary nuptial couch. But, to this day, I feel that somehow, someway, I fell down on my job as a salesman.

Thirty-five years on a Pullman is quite a long time. So long, in fact, that I have difficulty in sleeping well at home, if I stay home too long. I miss the coziness and snug comfort of the universally well made Pullman bed. (If my wife reads this, the editor added it.) I miss the rumbling rhythm of the wheels on the rails and the deep song of the whistle in the night.

When they finally put me out to pasture I'm going to persuade my Pullman friends to sell me a complete berth, hammock and all, and I've got a corner picked out in my bedroom. If I can get a phonograph record of a train rumbling along, with a few well placed whistles in it, I'll be all set for a good night's sleep.

Empire Builder

An action sequence, following over the lowest northern

Illustrated by W. R. McGee.

NEAR Summit, Mont., on the Great Northern line along the south edge of Glacier National Park, *Empire Builder* passengers see a statue. It is of John F. Stevens, and well might he be immortalized in stone, for it was he who discovered Marias Pass at whose highest point the statue stands. With an altitude of only 5213 feet, this is the lowest and easiest railway crossing of the Rockies north of New Mexico. It was after Stevens had discovered the pass in December, 1889, that James J. Hill began the Pacific extension of the Big G from Havre, Mont., on the Milk River, which had previously been the western terminus.

Shortly after noon on the second day out from Chicago the Empire Builder passes through Summit. This is the *Empire Builder's* big day, a day when it not only crosses the Continental Divide, but also runs for nearly 60 miles along the southern edge of the only national park on a railroad line, with matchless mountain scenery in constant view. It is a day of watching the crystal-clear streams of the western slope grow into rivers, a day of lakes and canyons and of snow-capped peaks.

At breakfast time the train is stopped at Havre, where the 2500-series 4-8-4 is serviced, or perhaps changed. (Under present traffic conditions, *Empire Builder* engines may be changed at Minot, Havre, or Whitefish, or may even run through from St. Paul to Spokane.) Until lunch

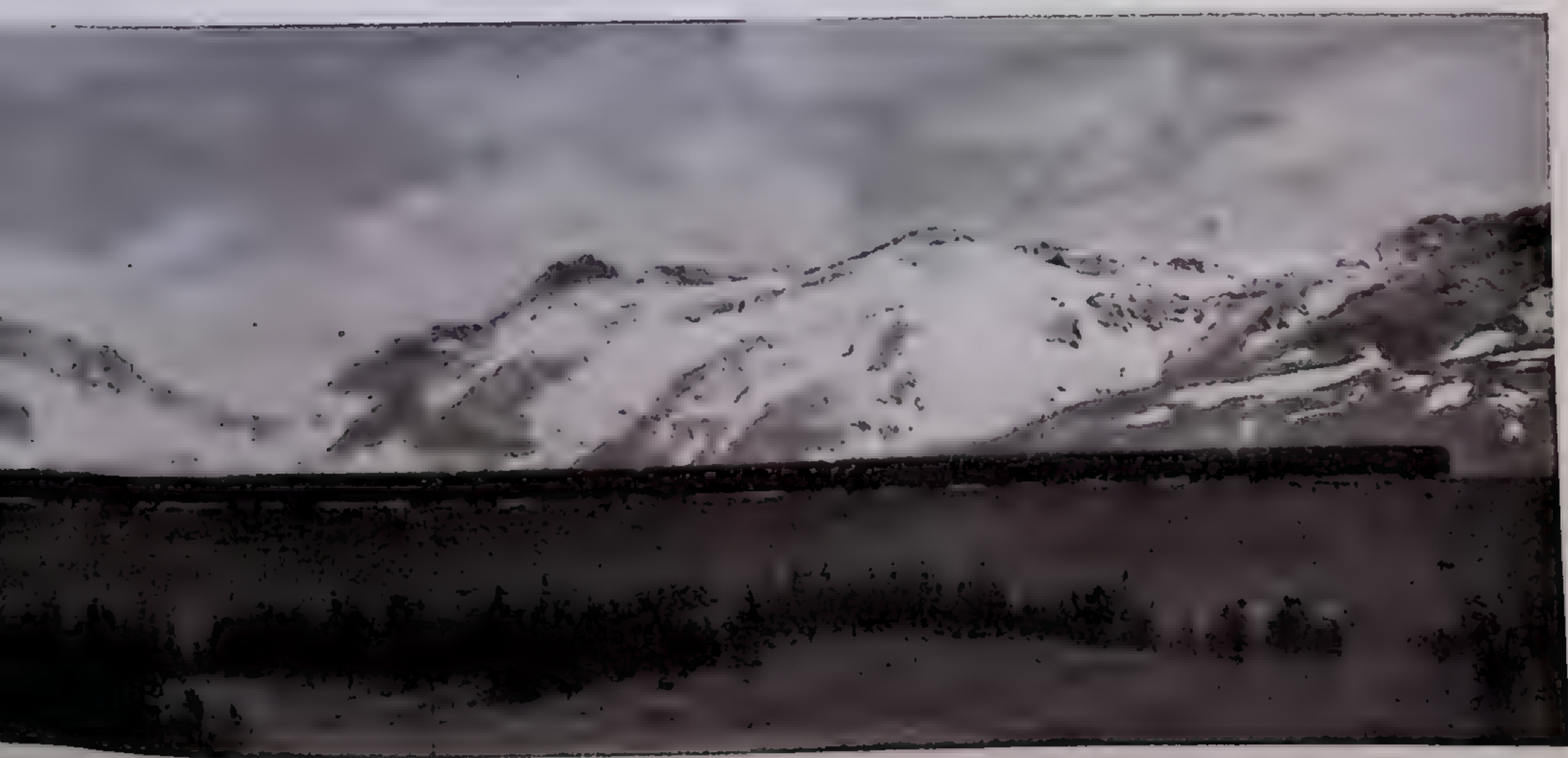
at Marias Pass

Great Northern's Coast train crossing of the Divide.

Commentary by A. C. Kalmbach.

12:05 With snow-capped peaks deceptively close ahead, Great Northern's train No. 1, the *Empire Builder* westbound, bites into the foothill grades near Browning, 14 miles east of Glacier Park. The "going" and "coming" views were taken at the same spot. Engine 2588 is pulling the train today, and the makeup is 10 cars, including a postal-baggage car, standard coach, two de luxe coaches, a tourist Pullman, diner, three standard Pullmans, and the observation-club car with barber shop, shower baths, and valet service which was a feature of No. 1 before the war.

12:39 At Rising Wolf, five miles west of Glacier Park station, the snow-capped peaks are close to the right of the train as it works up the last seven miles to the Continental Divide.



time the 80-inch drivers pull the string of R.P.O. car, coaches, diner, tourist and standard Pullmans easily up the gentle slopes to Summit, over a ruling grade of only 1 per cent. After lunch comes the run down the west slope, ruling grade 1.8 per cent, through the delicious green of western Montana, northern Idaho, and into Washington, following the Flathead, Stillwater, Tobacco, Kootenai, and Clark Fork rivers and skirting the edge of Whitefish Lake. At 9:30 in the evening the *Empire Builder* is in Spokane, ready for the overnight run to Seattle. Those who wish can stay in a Spokane hotel and take the day train, No. 5, across the Cascades and through the continent's longest railroad tunnel.

Of the three northern transcontinental railroads, Great Northern is the closest to the Canadian border. Northern Pacific, the earliest northern route, and the Milwaukee, newest of the three, cross and recross each other 50 to 100 miles to the south.

Of all the Great Divide crossings, Marias Pass is farthest west. The only other major summit on the Great Northern main line is at Cascade Tunnel, where it crosses the Cascade Mountains east of Seattle. The affiliated Spokane, Portland & Seattle avoids even this on its water-level line down the Columbia River Valley from Spokane to Portland.

12:40 Still working steam on the upgrade to Summit, the *Empire Builder* is shown at top of opposite page a short distance west of Rising Wolf. The peaks beyond are in Glacier National Park, of which the railroad forms the approximate southern boundary.

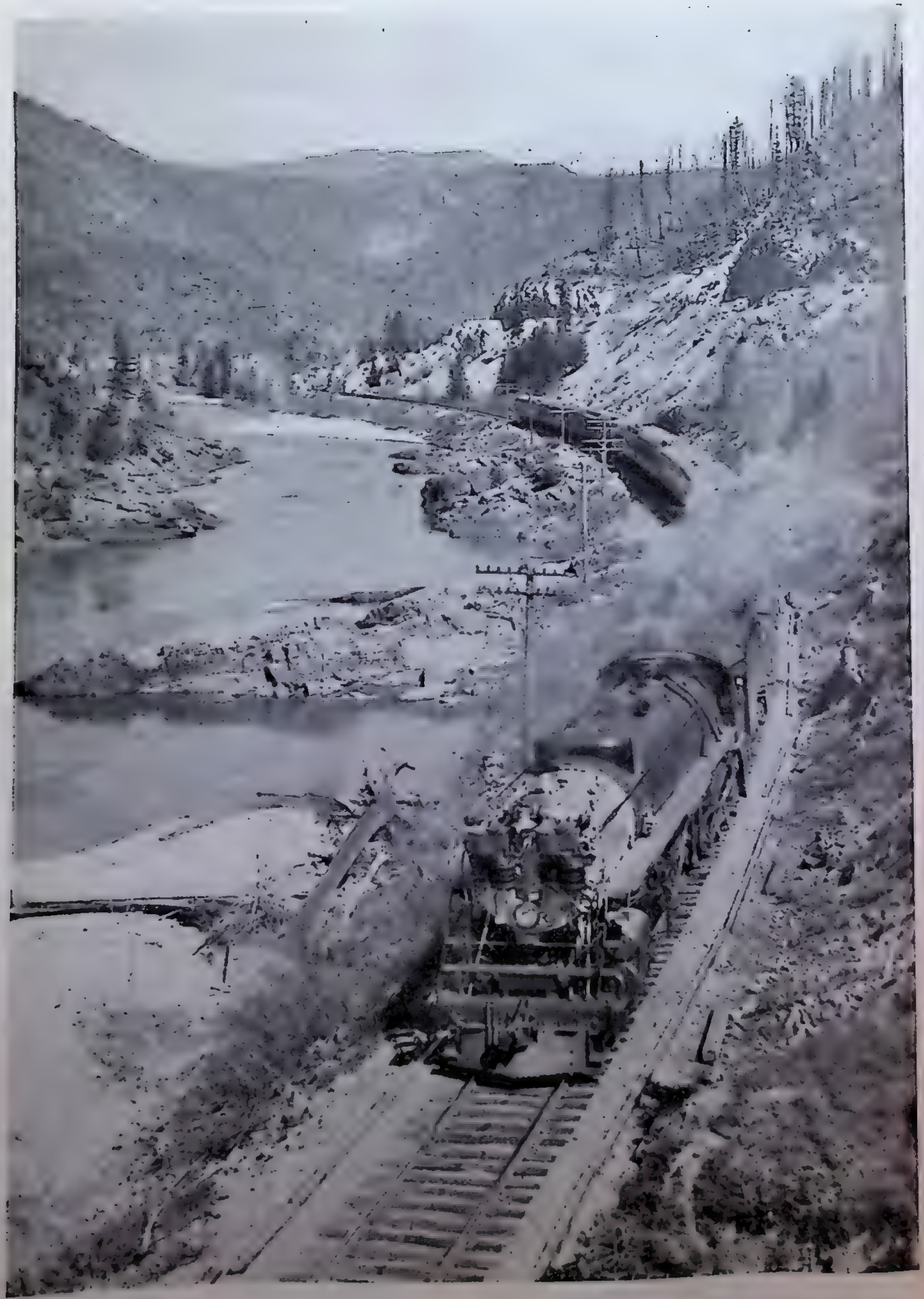
12:43 Two miles west of Rising Wolf the mountain view is momentarily obscured as the train hugs the edge of a hill. It is crossing a minor saddle which deceived early explorers and gave the place the name of False Summit.

12:51 Summit, and the climb is ended.

12:53 No longer working steam, No. 1 starts downgrade from Summit (top photo, below). Bear Creek is already beginning to grow alongside the left-hand car windows, and Summit Mountain rears its bulk in the background.

1:08 Near Singleshot, 10 miles west of Summit, the *Empire Builder* glides downgrade along ledges carved out of the rocky south reaches of Snowslip Mountain. Reason for only one head-end car on this train is that most mail and express is carried on the *Fast Mail*, No. 27, which leaves St. Paul five minutes ahead of the *Empire Builder* and in this part of the run is some four hours ahead. No. 27 carries coach passengers only, arrives in Seattle at 5 a. m.

Continued on next page.



1:59 Typical of the *Empire Builder's* second day out of Chicago is the scene on opposite page, between Red Eagle and Belton along the Middle Fork of the Flathead River. The water is so fresh and clear that train passengers can readily see the rocky bottom, and the deep pools are a constant temptation to disembark and go fishing. The north bank of the river is in Glacier National Park. The canyon is named after Stevens, discoverer of the pass.

2:25 At Coram No. 1 crosses the Flathead River on a steel viaduct.

2:30 With the afternoon still young, the *Empire Builder* traverses Bad Rock Canyon, between Coram and Columbia Falls, junction of the branch to Kalispell. Ahead lies more scenery, until nightfall. In another half hour, near Whitefish, the traveler will see, from the right side of the car, a marvelous panorama of half a dozen 10,000-foot peaks ranged beyond the far shores of bright-blue Whitefish Lake.

End.

Grass Roots Railroad

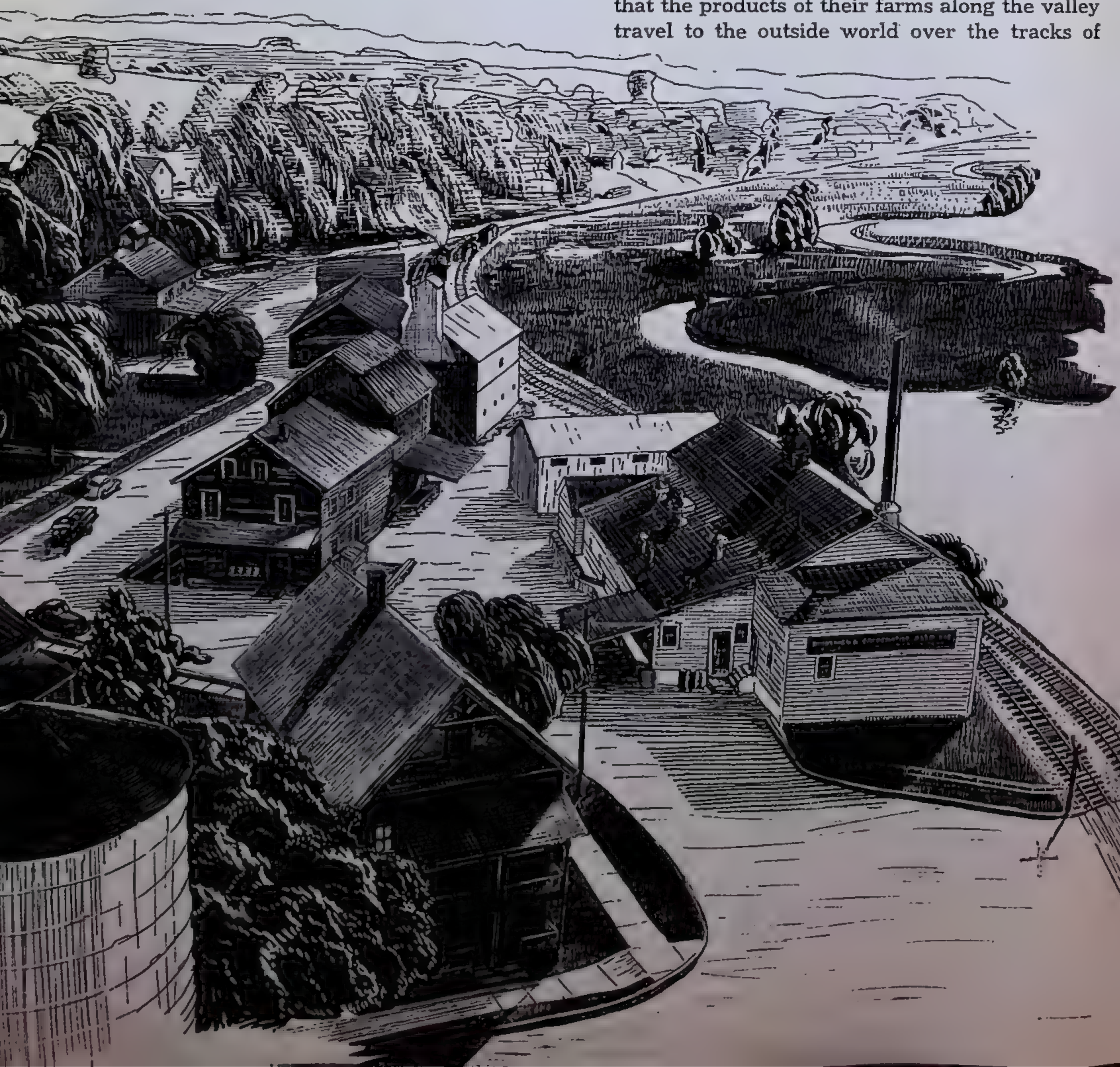
★ **The home town takes pride in the 49-mile Unadilla Valley, and that helps make the wheels go 'round.**

By Henry P. Eighmey.

"HAVEN'T ye see'd our railroad? Well sir now, that there is something ye must see!"

That is the answer received when I asked a man on the main street of New Berlin, N. Y., concerning the whereabouts of the Unadilla Valley Railway—and that is the spirit that makes this little railroad a paying proposition, and recently caused it to do an unheard of thing in this day and age: It purchased a branch of a larger railroad system!

When the short freights of the Unadilla Valley go chuffing up the line to Bridgewater and return, people along the way wave a friendly greeting—and more than that, they see to it that the products of their farms along the valley travel to the outside world over the tracks of



the UV. The little pike can well be termed the "Pride of the Valley."

In the present era it has been a common occurrence to have some large railroad system take over a small railroad and either add its trackage as a feeder for the system or junk the entire outfit. But the Unadilla's move is a horse of another color, for here we find one of the little independent lines purchasing a section of a larger system and operating it in conjunction with its original line.

October 21, 1941, marked the date when the last train operated over the "New Berlin Branch of the New York, Ontario & Western system." On that day the Unadilla Valley Railway became the owner of the 29 miles of track stretching from New Berlin Junction to Edmeston, and with the addition of trackage rights over the O&W into Sidney, N. Y., from New Berlin Junction. Not only did the UV buy the line, but it also purchased O&W locomotive No. 272, two cabooses, and one snow flanger.

So much for the purchase. Let us look into the background and see what makes the Unadilla's wheels go 'round.

The Unadilla Valley Railway now boasts approximately 50 miles of track rambling through a sleepy little valley where, as the schoolroom geography books term it, "the principal occupation is agriculture." Farm products, including vegetables, cattle, milk, and chickens, afford a source of income for the railroad, while incoming commodities needed by the farm folk are another source of revenue. Add to these, several factories, including the large Kraft-Phoenix establishment at South Edmeston and an egg-drying and vegetable-drying plant at New Berlin, and one can readily see that the UV should not have to exist in vain.

About 10,000 tons of anthracite moves over the Unadilla in a year's time, and almost 1000 tons of livestock is hauled behind its little locomotives. Several hundred cars of milk annually furnishes another source of revenue, while cheese from the Kraft-Phoenix plant and carloads and l.c.l. shipments of every kind of merchandise imaginable roll over its rails.

In close to a half-century of service, the Unadilla has rarely maintained less than two trains per day over its original 20-mile line, and now it operates

one train per day over the newly acquired 29-mile line from Edmeston to New Berlin Junction. Only one serious wreck is listed in the little pike's history; close to 50 employees are on the payroll; and a couple of thousand dollars rolls into the treasury of the town of New Berlin in the form of annual taxes.

Usually 10 or 12 cars make up the Unadilla's trains, and four years ago 21 cars were hauled in one freight. The rails run through a picturesque valley and the locomotives have little trouble with their daily tonnage, although at South Edmeston the ramp to the cheese factory climbs about five per cent, causing the little locomotives to churn their drivers in pushing cars into the siding.

To better understand the spirit which keeps the wheels rolling on the Unadilla, let's take a jaunt along the original 20-mile line stretching from New Berlin to Bridgewater.

It isn't hard to find the Unadilla's yards in New Berlin—any of the natives readily point the way down a side street of the town to the small two-story building on Jaquith Avenue where the business of the railroad is transacted. Behind this structure is the original terminal of the road, with a four-stall enginehouse, freight house, and several smaller buildings which adequately take care of the needs of the Unadilla. Several sidings branch off from the main line to serve the various shippers at New Berlin.

If we pay our visit to the yards around noon, we will probably see either locomotive No. 4 or No. 5, 2-6-2 type, resting on the tracks leading into the enginehouse, with smoke lazily rising

Sketches, by Linn H. Westcott, based on photographs by Otto Hagel, courtesy *Fortune*.

from its stack. These two Prairies do the bulk of the hauling on the Bridgewater run. Within the enginehouse we catch a glimpse of another boiler front, and upon investigation we find No. 1, an old-time 4-4-0 with a high stack, used as a spare locomotive and for bucking snow in the winter. The snow is a sizable problem at times, according to some of the New Berlin residents. The fourth locomotive on the roster is the former No. 272 of the O&W, a 2-6-0.

On the siding to the right of the enginehouse stands the rolling stock of the UV—a couple of cabooses and a flanger (purchased from the O&W), a snow plow, and several work cars. About 10 years back the Unadilla passenger service was discontinued, and the remains of some old open-end coaches can be seen rotting amid the brush alongside the main line to Bridgewater—mute evidence of the time when the valley people "rode the plush."

A rather unique feature of this little independent line is the lack of a time-card. A question concerning the schedule on the 20-mile Bridgewater run brings a laugh from one of the brakemen, who informs the world at large that "there hasn't been a time-card since we quit hauling passengers 10 years ago." It develops, however, that two trains per day do travel the Bridgewater route—one leaving about the time the first rooster sends his call across the sleeping valley, and the other chuffing out of the New Berlin yard in the neighborhood of 4 in the afternoon. One train per day is maintained over the former O&W line.

To better follow the workings of the Unadilla, we might elect to ride the afternoon train from New Berlin. About 3 o'clock the engineer and fireman arrive at the enginehouse and begin poking about No. 5, and shortly thereafter the little 2-6-2 is puffing up and down the small yard in the process of assembling the train.

Two empty "milk cars" are picked up at the siding by the creamery near the former O&W track, three box cars are coupled on from the freighthouse track, an empty gondola is next, and then the caboose is tied on the rear. As the engineer pokes his head from the cab in search of the conductor's highball, we climb aboard the caboose platform. A slight jerk tells us we are on the way.

We learn from the conductor that we'll have to roll a bit faster than usual this afternoon if connections with the Lackawanna train at Bridgewater are to be made, so it is not very long before the caboose is swaying from side to side as the 2-6-2 picks up speed.

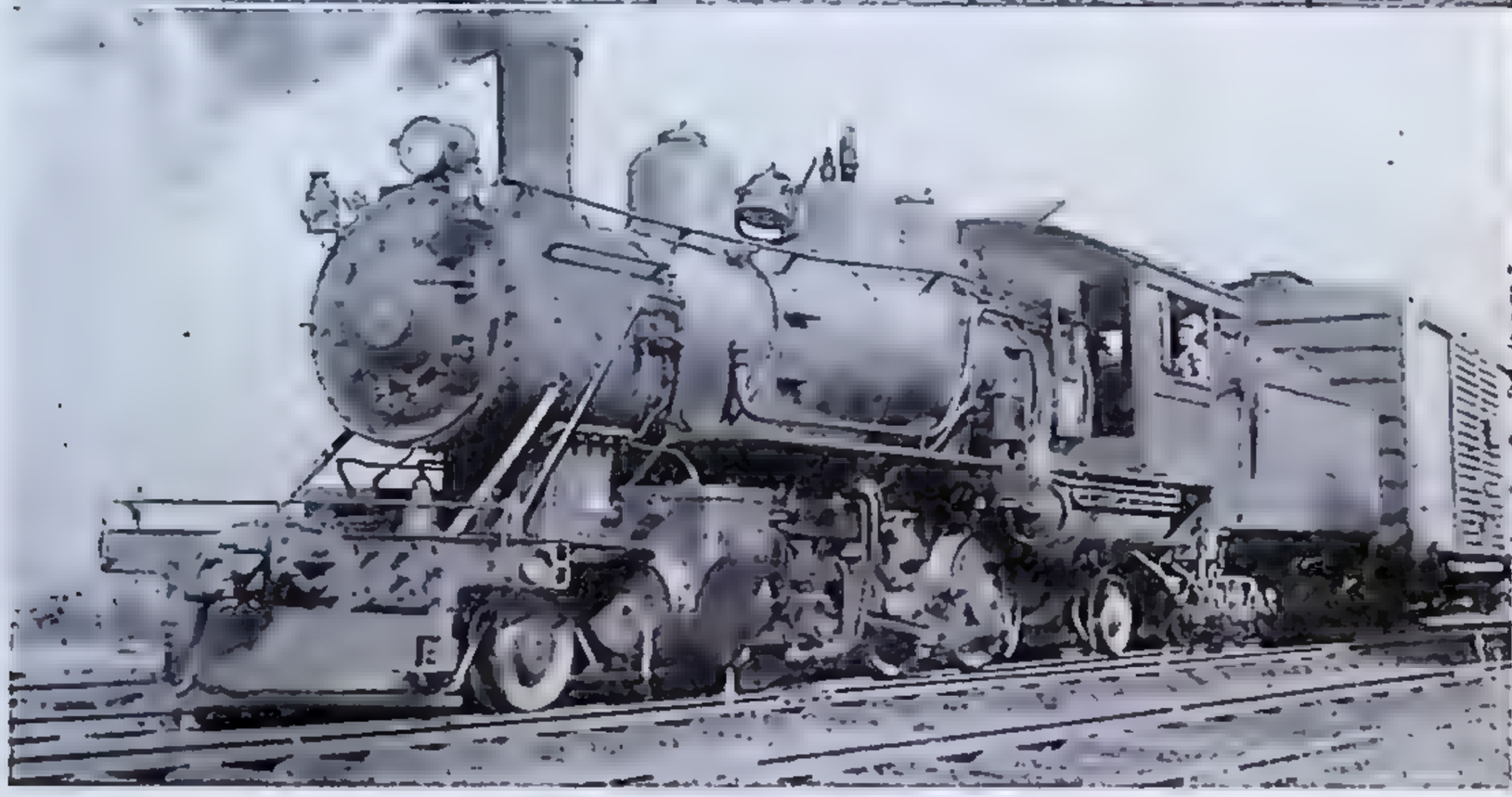
Past the forlorn passenger coaches rising from the weeds, over the switches of the wye used in place of a turntable at the New Berlin yard, we bounce along as the low-wheeled locomotive pitches and rolls to the increased tempo of the exhaust. From the back platform of the caboose we gaze back at the weed-grown right of way and notice that, despite the weeds, the light rail is in good condition with evidence here and there of recent tie replacements and an occasional new concrete culvert.

A short distance from New Berlin we pass the ill-fated gravel pit which the little railroad purchased some years ago with an eye to a thriving business venture. We learn that this enterprise was "a big mistake"—that the large gravel bins have been the source of little output since they were acquired.

The first stop is at South Edmeston, about five miles from New Berlin. Here is located the large cheese plant, a feed and grain dealer, and one of the largest chicken farms in New York State. These three enterprises are all sources of revenue for the Unadilla Valley, with the cheese plant furnishing over 400 carloads per year in shipments of incoming cream and outgoing cheese. We switch a couple of milk cars into the plant's siding and haul out two loaded reefers—all with a great deal of slipping and puffing on the part of the locomotive, due to the five per cent grade on the siding.

Six miles farther we come to West Edmeston, after observing more recent work on the right of way by the section crew. New ties are again in evidence, weeds have been cut and burned,

Otto Hagel, courtesy *Fortune*.



Lower left, Theodore O. Gay, 624 78th St., Brooklyn, N. Y.; others, Otto Hagel, courtesy *Fortune*.

No. 4, the Unadilla Valley's small-drivered Baldwin-built Prairie, figures in all the photos on these two pages. Above, it ambles along with a one-load freight before a backdrop of typical central New York scenery. At right, the view from the fireman's side of the cab. Below, the 4-spot herself.

and the fences along the track have been mended to keep the farmers' cattle from an encounter with the "iron horse."

West Edmeston is the location of another feed and grain dealer, a livestock merchant, and a Sheffield milk depot—all Unadilla Valley shippers. No stop is made here on the up-trip. This is to save time, we find out from the conductor.

The next stop is Leonardsville, the site of the water tower where the Unadilla locomotives quench their thirst. Water is pumped into the tower from the river flowing down the valley, and here No. 5 replenishes her supply and also picks up an empty box car from the Babcock Manufacturing Company.

River Forks, the next station, is passed without a stop, and we arrive at the Bridgewater terminal just as the Lackawanna freight pulls in. Our locomotive is turned on the wye at Bridgewater, the train is pushed on the Lackawanna siding, and some loaded cars from the larger road's freight are coupled on the 5-spot.

The switching at Bridgewater, as at New Berlin and all along the line, features some fast and fancy footwork by the Unadilla brakemen. No grass grows under their feet as the entire crew, despite continuous "riding" of one another, cooperates to the fullest extent. The reason for these bursts of energy is explained by the conductor, who points out that the sooner they complete the switching, the sooner they can highball back to New Berlin and to bed! No meets planned for lonely sidings by irate dispatchers can stop the Unadilla's crew!

Nine cars tail behind the 5-spot as we leave Bridgewater on the return trip, and from the caboose platform we are introduced to some really beautiful scenery as the moon sheds its light over the rolling countryside and reflects in the stream that trails the right of way.

A gondola loaded with coal and a loaded box car are dropped off at Leonardsville, and two reefers are pushed into the siding at South Edmeston. We watch the brakemen's winking lanterns and listen to their hoots as they "ride" the engine crew for being "so all-fired slow." Yet the cars are shoved into the sidings with dispatch and the train is soon on its way.

We arrive at New Berlin about 8 o'clock, the locomotive is turned on the wye, the remainder of the train is pushed into the yards, and the 5-spot is backed down to the enginehouse for the night.

With cheery goood-nights the crew-members leave for their homes and a night's rest—to be up at dawn for the morning run so that shippers will have the service which is founded on that loyalty portrayed in one native-son's remark:

"Yes, sir, we have a mighty fine little railroad up here—we wouldn't want to do without her."

Railroads of Italy

★ **Partly in the hands of the United Nations, partly in those of the Axis, rail lines are vital to both.**

By Arthur L. Stead.

EVER since the forces of the United Nations, fresh from their victories in North Africa and Sicily, carried out their landings on the beaches of the Italian mainland, the railroads in this corner of Europe have been conspicuous in the news, and the capture and gradual extension of these essential lines of communication are achievements of the first importance in the great struggle against the aggressors. Today, Italian railroaders in the area freed from the enemy are working side by side with our military transportation troops in the rehabilitation and operation of the steel highways serving the southern portion of the peninsula.

Altogether, Italy possesses approximately 13,000 miles of railroad, supervised in normal times from headquarters at Rome, roughly half way down the peninsula. Most of the Italian roads have for years been government owned and operated, and the few relatively unimportant systems remaining in private hands were promptly taken over by the state at the outbreak of the present war. To really understand the Italian railroad situation, it must be realized at the outset that for long months all the rail undertakings of this sorely misruled land have in practice been part and parcel of the German war transportation machine. At headquarters and all the big centers, German officials early in the war replaced Italians, and direction of the Italian railway undertaking actually came from Berlin and not from Rome. Although the Italian railroaders had little love for their German partners, that was part of the price Mussolini had to pay for his madness.

Looking at the map of Italy, you will observe that the railroads consist in the main of a pair of principal trunk routes stretching from northwest to southeast right down the peninsula, one on either side of the country. To these roads there is added a most intricate network of tracks in northern Italy, stretching from the French frontier in the west to the Austrian and Jugo-Slav borders in the east. A distinct railroad system serves the island of Sicily, and another small system operates in the isle of Sardinia.

The railroads of southern Italy, now wholly in our hands, did not in normal times rank as of such great importance as the northern lines. Southern Italy mainly is an agricultural territory, and in peacetime there were few heavy industries in the area to bring business to rail. This was essentially a vacation land, and passenger business in the main overshadowed freight. When war came along, numbers of munitions factories were established by the Italians in the south, but these were mere flea-bites compared with the great industrial activities of the northland. In contrast to the industrial North, where the terrain mostly is flat with few natural obstacles to railroad construction and operation, the whole stretch of country lying between the toe of Italy and Naples and Rome abounds in mountains and ravines. Naples, Bari, Brindisi, Taranto and Raggio are the principal railroad centers of the South, with Messina and (indirectly) Palermo, on the island of Sicily, linked to the mainland by passenger and freight ferries.

In northern Italy the railroads form a dense network of tracks, comparable with that found in Germany's Ruhr Valley, a territory which this particular portion of Italy very closely resembles. Here the railways serve heavy industries of every conceivable type, centered in such important cities as Turin, Milan, Genoa, Venice, and Trieste. Most of the North Italian industrial centers, engaged in all types of war work, have often been attacked by our bombers, while the great port of Genoa also has been shelled from the sea.

On the outbreak of war in 1939, the Italian railroads owned about 7000 passenger and freight locomotives, 11,500 passenger cars, and 160,000 freight cars. These holdings were supplemented by stocks of the then privately operated railroads — the Veneta system, 500 miles in length; the Milan Northern system, 180 miles long; and the so-styled National Railway Company with about 90 miles of track.

Italian locomotives are of both local and foreign manufacture. Many have been imported from Germany and Austria, and German importations have been particularly heavy of late. A feature of locomotive practice, arising out of Italy's shortage of good coal, is the use of coal bricks (small fuel compressed into block shape). In branch service, the Italian roads used to operate many types of

Wide World.

German demolition engineers blasted this viaduct at Caserta as their armies retreated from the area.

Burton Holmes, from Ewing Galloway.

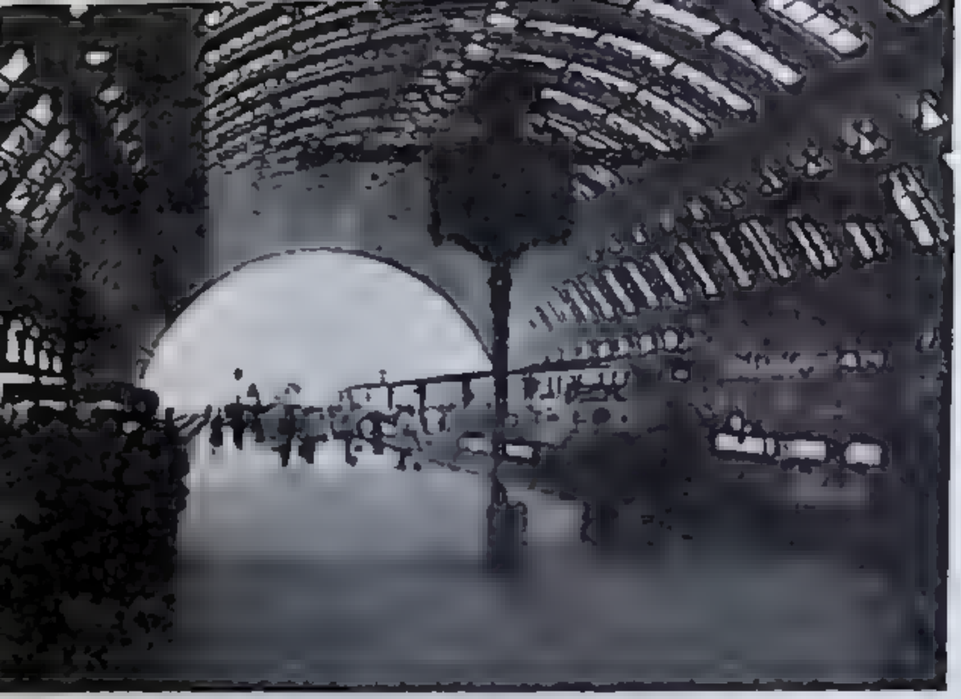
gasoline railcar, but these cars disappeared long ago or were converted to use other fuels.

Tourists who visited Italy in the years immediately preceding the war will recall that the country possessed many really fine passenger depots. Many of these, under present conditions, have gone to ruin, but the Nazis always have seen to it that working facilities never were allowed to suffer unduly.

Of all the Italian passenger depots, the most outstanding is that at Milan, the great nerve center of the transportation system in northern Italy. The terminal building consists of two lateral wings, each 500 feet long and 33 feet wide, with a connecting portion, the whole roughly forming the shape of a horseshoe. The main ticket-hall is 210 feet long and 110 feet wide, and from this, two wide staircases give access to the departure

Wide World.

Above, the Genoa station as seen from Hotel Miramare. The original station is at right; newer portion serves tunnel at left which passes under the city to connect with railroads to Florence, Rome and Naples. Bottom, an electric streamliner built in 1936.



Burton Holmes, from Ewing Galloway.

Train shed of a station at Milan.

Bruni Foto Agenzia.

A prewar Fascist sentry at a yard which has not been electrified. Italian steam locomotives have two headlights, buffers, and link couplers. The air pump is mounted outside as on U. S. locomotives. Piston rod extends through front of cylinder. Below, a rail car in service between Milan and Venice on the east-west line through the Po River Valley.

Bruni Foto Agenzia.

platforms situated some 25 feet above highway level. The main concourse is 610 feet long and 73 feet wide. There are 26 platform tracks within the depot, each being equipped with a 24-foot passenger platform and a separate service platform 13 feet wide, for handling baggage and mails. All the platforms are at least 1000 feet in length. The Milan station is an important military target, and has time and again received the attention of our bombers.

Civilian movement on the Italian railroads naturally has been cut to a minimum. Few fast civilian trains have operated for a long time, and such trains as do run are made up of very primitive cars. In normal times the Italian railways ran six distinct classes of passenger train. These were respectively the *Di Lusso*, the *International*, the *Direttisimi*, the *Diretti*, the *Accellerati*, and the *Omnibus*. The *Di Lusso* represented the peak of luxury travel, and the *Omnibus* the slowest train, made up of rough, wood-seated cars. The fast luxury trains were formed, as a general rule, of vehicles provided by the Belgian undertaking known as the International Sleeping Car Company—a sort of European equivalent of the American Pullman Company. Today, most of these fine cars have been commandeered as living and office quarters for Nazi bigwigs.

From the remainder of the European continent, Italy has reached principally by the Mont Cenis, the Simplon, and the St. Gotthard Alpine Tunnel routes. From Rome to London, via Mont Cenis, is a distance of 1191 miles. In happier days this through journey occupied 36½ hours. The Simplon Tunnel route between the two capitals covers 1247 miles, and the St. Gotthard route about 1300 miles. The Rome-London fast service was maintained jointly by the Italian State Railways, the Paris-Lyons-Mediterranean and Northern railroads of France, and the Southern Railway of England. The same route also gave through connection between Brindisi, at the extreme southeastern corner of Italy, and London, a distance of 1459 miles.

After leaving Turin in a southerly direction, the London-Paris-Rome and London-Paris-Brindisi routes diverged. The Rome services were routed via Genoa, Pisa (famed for its leaning tower) and Civitavecchia. The Brindisi trains followed the eastern trunk road via Bologna, Ancona and Foggia. Southward from Rome, the western trunk route proceeds to picturesque Naples, Salerno (where the United Nations made their landing) and Reggio, on the Straits of Messina, with forward connections to Sicilian points. Nettuno, where our surprise landings were made in January, lies on this particular route, or to be exact, on a branch road about eight miles long diverging from the western trunk road at Campoleone, some 15 miles south of Rome.

In addition to the Mont Cenis, Simplon and St. Gotthard cross-Alpine lines, the Italian railroads are connected with adjoining countries by another north-and-south trunk road leading from Venice, Trento and Bolzano, through the Brenner Pass to Innsbruck and Munich. This is a most important military route, over which the Nazis send most of their men and materials to the Italian battle-front. Connecting southern France and Switzerland with Austria and Eastern Europe, there are also important international tracks passing through the Italian cities of Turin, Milan, Verona and Venice. Some years ago a costly strategic road, known as the Nice-Coni Railway, was built connecting Nice and the French Mediterranean seaboard with Piedmont, Lombardy and Central Europe.

The Nice-Coni Railway, which was employed extensively when the Italian armies overran the Riviera Coast, is 65 miles in length, and covers very mountainous terrain. In the crossing of the Alpes Maritimes, 45 tunnels are involved, and there is an immense number of magnificent bridges spanning the river valleys. One of the most important depots on this road is at Brail, on the French-Italian frontier. It possesses enormous platforms, capable of accommodating 15 passenger trains simultaneously, and is obviously of tremendous military value.

The two principal trunk roads, running the full length of the Italian peninsula, on the eastern and western coasts respectively, are linked at various points by lateral roads of greater or lesser importance. In the Italian railroad improvement plans between the first and second world wars, great importance was given to the building

Bruni Foto Agenzia.

In the center of the 11½-mile Appenine Tunnel (above), second longest in the world, is this large "station" on the main line of the 51-mile Bologna-Florence Direct Railroad. Freight trains use the sidings to permit passage of passenger trains. This railroad is the principal north-to-south line in Italy, and it replaces an older line miles longer with long grades and considerable curvature.

of a new trunk road connecting Naples with Milan, 520 miles distant, with a line leading from Bologna toward Venice. This work included the piercing of the Apennine Mountains by a tunnel more than 11 miles in length. The Naples-Rome section of this route is remarkable for its freedom from severe curves. There are no grade crossings whatever in the 135 miles separating Naples from Rome, and the maintenance of this important rail link is a responsibility which will fall on our railroad troops.

Close to Naples is one of the world's most remarkable railways —the Mount Vesuvius road. This line is actually the only system on the six continents to climb to the summit of an active volcano, and the height of Mount Vesuvius is 3870 feet. The starting point of the Mount Vesuvius ascent is the Naples depot of the Circumvesuviana road. A 20-minute run from there and one reaches the station of Puglianao, where the Vesuvius Railway proper begins. The first section of the Vesuvius road is operated on conventional electric lines as far as the foot of Mount Cateroni, where the second section commences — a rack-and-pinion road with a maximum incline of 25 per cent.

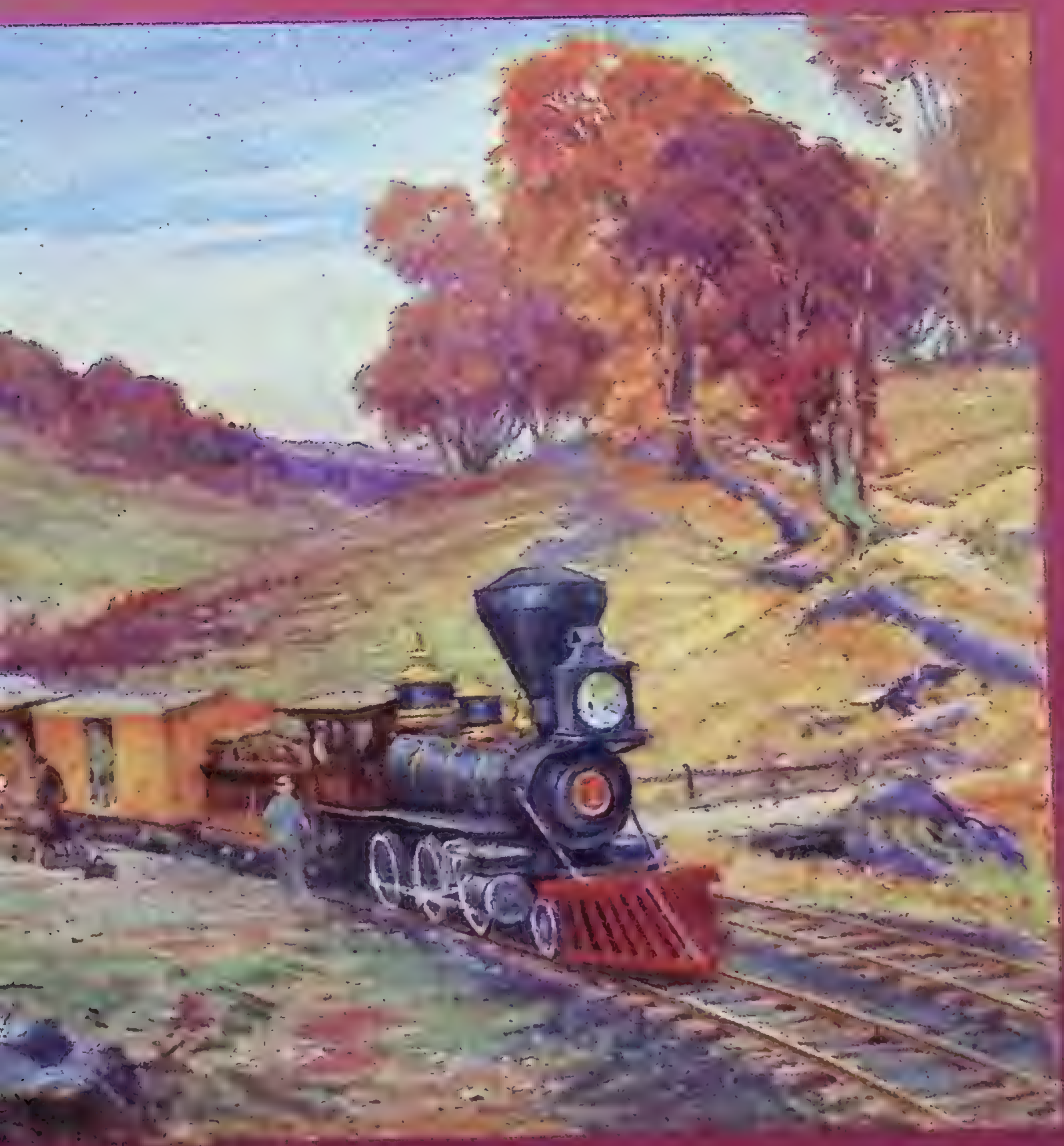
On reaching the depot of Eremos, the rack-and-pinion system of haulage reverts once more to the adhesion method, and there one passes through fascinating fields of lava from the crater above. Twelve minutes after leaving Eremos, a funicular section is introduced, and change of cars becomes necessary. The remaining portion of the journey is accomplished in 10 minutes. The length of the funicular is 2700 feet and the grade varies from 49 55 per cent. The cars each seat 20 passengers, and a feature of their construction is the very powerful brake equipment. From the upper station of the funicular, it was possible, when the volcano was in a kindly mood, to make the descent on foot into the heart of the crater. That, of course, was in peacetime; today the trip up Vesuvius is not possible.

Because of the shortage of good-quality coal, the Italian railroads long ago turned to electrification as a convenient and economical working arrangement, and large natural water resources have been harnessed for the generation of power for railroad use.

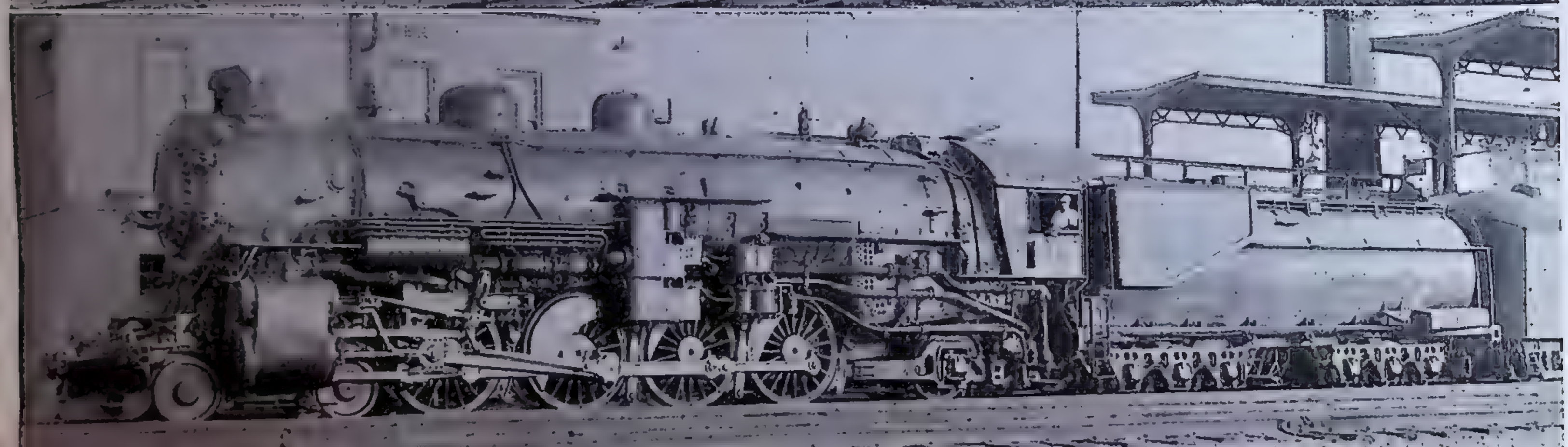
Italy's initial adventure in the field of electrification dates back to 1899, when motor cars with accumulators were employed on the Milan-Monza road. In 1901, the Milan-Varese electrified route was opened on the continuous-current system with third rail (650 volts). In the following year, the Valtallina road was electrified on the three-phase system, and today the greater number of the Italian electric roads are worked on this arrangement. Interesting types of electric locomotives utilized include what are known as the E-331 and E-332 classes for fast passenger haulage. These are equipped with a pair of motors of a total hourly rating of 2000 kilowatts. The machines are of the 4-6-4 wheel arrangement and have a total weight of 92 tons.

In normal times, some 200,000 men and women workers were on the payroll of the Italian railroads, and until the political jobbery of the latter years of Mussolini's dictatorship, these employees formed a happy and painstaking family. Today, in the portion of Italy freed from the aggressors, railroad workers are giving their best in aiding our military transportation branch.

Way Station



4315
SOUTHERN PACIFIC LINES



Lower photo, L. Haug. Top, Courtesy Southern Pacific.

Southern Pacific Veteran

A STEAM locomotive doesn't wear out. The only reason an engine ceases to exist is because there is no further need for motive power of that particular size. But if that size of engine is still needed, necessary repairs are made and old parts are replaced with new. Modern developments are added from time to time, and age ceases to be an effective measure of the engine's usefulness.

Typical example is the Southern Pacific's Class MT-1 series of 28 Mountain-type locomotives built to SP specifications by American Locomotive Company and placed in service 20 years ago, from December, 1923, to May, 1924. These engines are numbered 4300 to 4327 inclusive. They were of thoroughly up-to-date construction at the time, and incorporated as new features Worthington feedwater heaters, Franklin boosters, enlarged steam-exhaust ports in the cylinders, constant-resistance engine trucks, Delta trailing trucks equipped with 20 per cent constant-resistance centering devices, and Franklin lateral-motion driving boxes to allow the locomotives to take curves with minimum stress on the track.

When they went into service the MT-1's were put into long-run passenger service, covering a distance of 815 miles from Los Angeles to El Paso, the longest engine run in the country in 1924. Because their performance characteristics are still suitable for Southern Pacific uses, the MT-1's are still doing a good job, and because of maintenance and part replacement they are hardly older now than they were 20 years ago. In fact, in most of their wearing parts, including boilers and fire boxes, the MT-1's are probably only a few years old.

Nor do they even look the same. Some of the series have had skyline casings added, as shown in the top photo, so that to the layman they hardly appear to be the same locomotives. This Southern Pacific development throws the steam and smoke upward and clear of the train when the locomotive is operating with light throttle. Cylindrical tenders of 16,000-gallon capacity were added in place of the original 12,000-gallon tanks so as to enable the engines to go farther between water-stops. The cab front is now inclined instead of vertical. The pilots are now of the sheet-metal "snowplow" type instead of the more conventional spoked design. Even the headlights have been changed. All these changes are not apparent from the records. At least statistically speaking, engines 4300-4327 are still the same MT-1's built by Alco in 1923 and 1924.

Today these 28 locomotives are used satisfactorily in the heaviest passenger service on the Southern Pacific System and operate very efficiently on either fairly level stretches or on the more mountainous portions of the line.

The basic 4-8-2 design is also used on other Southern Pacific locomotives, including the MT-2's (numbered from 4385 to 4390 inclusive and originally built by American for the El Paso & Southwestern and renumbered when that property was acquired by the SP in 1924) and the MT-3's, MT-4's, and MT-5's (numbered from 4328 to 4376 inclusive and built at the road's Sacramento shops during the years 1925 to 1930). These were the last road locomotives built at the Sacramento shops, which three-quarters of a century ago, under Master Mechanic A. J. Stevens and Chief Draftsman George Stoddard, started a great tradition of locomotive designing and building on the West Coast.

Specifications:

Road classification	MT-1
Road numbers	4300-4327
Date built	1923-24
Tractive effort, pounds	57,510*
Cylinder diameter and stroke, inches	28 x 30
Driver diameter, inches	73
Weight on drivers, pounds	246,000
Weight on pilot truck, pounds	61,500
Weight on trailing truck, pounds	60,500
Weight of engine loaded, pounds	368,000
Steam pressure, pounds	210
Evaporative heating surface, square feet	4556
Superheater, square feet	1182
Tender capacity: Gallons of water	16,152
Gallons of oil	4692

* With booster, 67,670 pounds.

Courtesy Southern Pacific.

One inch equals 20 miles.

Railroads of Maryland

By E. L. Thompson.

THROUGH the heart of Maryland, the long finger of Chesapeake Bay reaches northward from the Atlantic Ocean, bisecting the state into what are known as the Eastern Shore and the Western Shore. The Eastern Shore is a low, flat plain, never very much above sea level. West of the bay is an ascent of about 100 feet, then rolling hills to the foot of the Blue Ridge (Catoctin) Mountains. Farther west are the Allegheny Mountains, rising to an altitude of 3400 feet.

As might be expected from such a diverse topography, railroading in Maryland runs the whole range from the slow, plodding power of the mountain country to the 90-miles-an-hour speedsters in the flat lands bordering the bay.

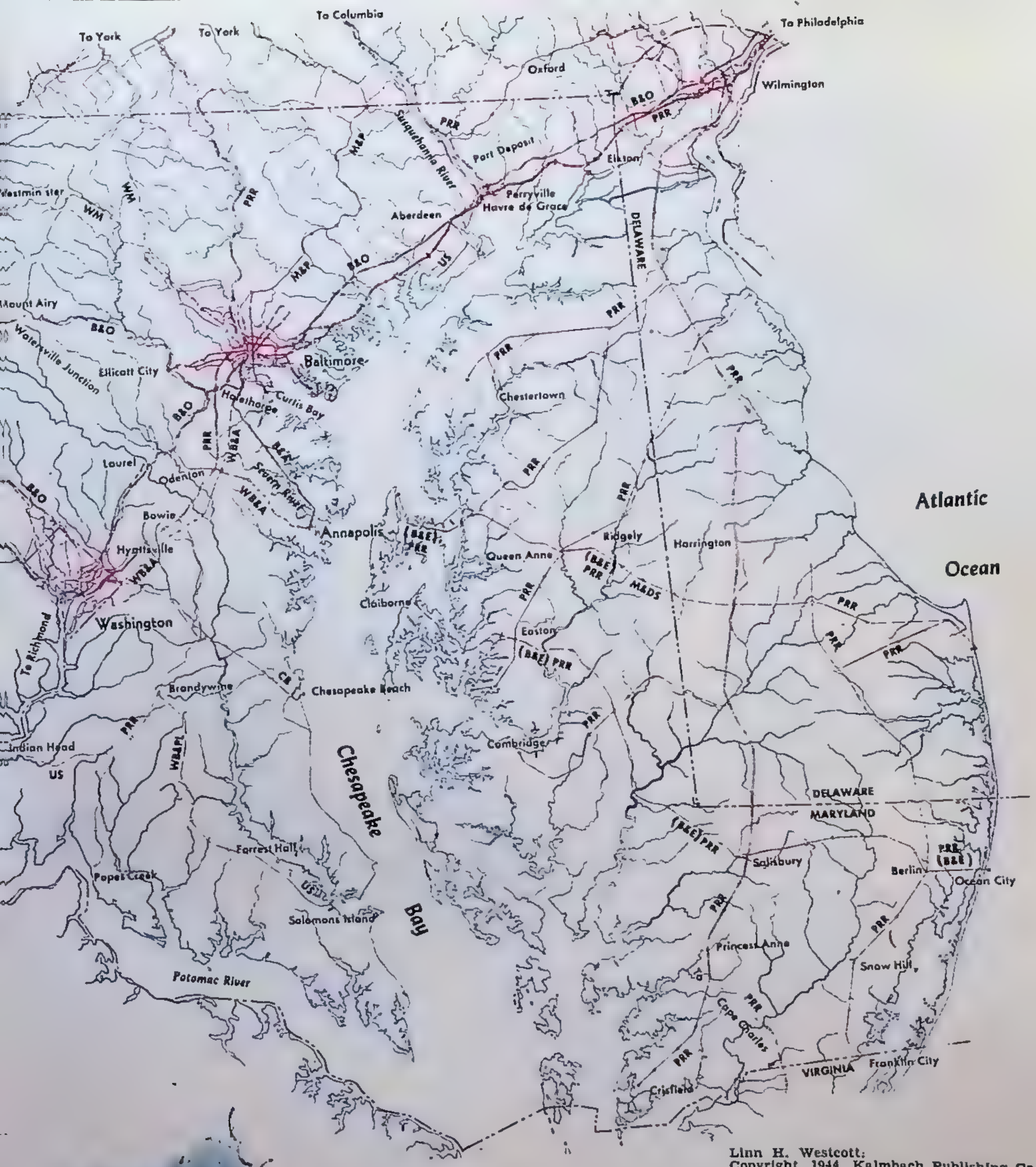
For the devotee of power, a half hour in the famous Narrows just north of Cumberland will provide thrills enough to last a lifetime. Here, in the deep passage between two rock-lined cliffs, dusk is just settling when two short blasts of a whistle shatter the tranquillity of the scene and put any genuine railfan immediately on his toes. His heart will beat faster as he hears the sharp exhaust of a heavy-duty Pacific combined with the rumble of a 4000-horsepower Diesel. The hubbub grows louder and louder, and soon one of the Baltimore & Ohio's P-1d's leads a big Electro-Motive Diesel (either the 62 or the 63) as the pride and joy of the B&O family—the all-Pullman *Capitol Limited*—rolls by, on its way to tackle the Sand Patch grade up the eastern slope of the Allegheny Mountains. Thirteen heavyweight, streamlined blue and gray cars follow in the wake of 151,000 pounds of tractive effort, and the watcher will have no trouble tracing the path of the train past Lover's Leap and through the north end of the Narrows. The noise is almost ear-splitting, making the rocky sides of the narrow cut ring as the steam engine strains to out-pull the Diesel.

Ten minutes later the scene is repeated as the *Ambassador,* bound for Detroit, comes along to start the big climb. The load on this train will vary from 11 to 14 cars. Another 10 minutes and Train 25, the all-coach streamlined *Columbian,* threads her way through these same Narrows to the tune of one P-1d Pacific-type engine and a mere seven cars.

During this 20-minute span, you may have seen one of the big Western Maryland 4-6-6-4 high-wheeled Mallets just across Wills Creek, also off to tackle the mountains with a big Decapod helper pushing. And, in all likelihood, an eastbound freight also has passed on the B&O.

Quite a show! But it is only a small sample of the many thrills which daily await the railfan in the "Old-Line" state of Maryland. Let's take a glance at some of the high spots before dwelling in more detail on specific points.

Perhaps, though it is hard to believe, our railfan doesn't enjoy lots of noise and slow speeds. Then let's go to a spot about a half mile east of Aberdeen, or perhaps just outside Baltimore at Bay View or Halethorpe, where one can be comfortable and still watch the high-speed electric trains of the Pennsylvania whiz back



Linn H. Westcott:
Copyright, 1944, Kalmbach Publishing Co.

Geographic trends in Maryland railroad location are easily discerned on a map. Of major importance are the lines paralleling the Atlantic Seaboard, which, in order to elude Chesapeake Bay and the Potomac, run far inland. A parallel route passes just west of the Blue Ridge, while another important trend is up the Potomac Valley.

Western Maryland train leaving Hagerstown station. Sketched by F. E. Knapp.

William Moedinger Jr.

Whistling for Pylesville, Md., No. 6 pulls the Baltimore Mail on the Maryland & Pennsylvania's 77-mile mainline run from York, Pa., to Baltimore.

and forth with almost streetcar regularity, and the high-wheeled Pacifics of the B&O. As a matter of fact, in these war days, we shall see quite a bit of Pennsy steam power, since there are not enough electrics to go around.

Or perhaps our railfan likes small-line railroading, and, if such is the case, he will be offered the winding, picturesque Maryland & Pennsylvania, which takes a month of Sundays to go from Baltimore to York, Pa., in a genuinely rustic atmosphere [TRAINS, Dec. '42].

Electric cars? Yes, indeed; here is the Potomac Edison, which operates the Hagerstown & Frederick, and the Baltimore & Annapolis, which connects the cities of those names. The B&A is the only remaining section of that once-famous Washington, Baltimore & Annapolis line. But more on that later.

If it's history that one is seeking, look no farther than Maryland, for much of the beginning of American railroads happened right here. What railfan alive has not heard of the historic race between the horse car and *Tom Thumb;* or of the famous court fights between the Chesapeake & Ohio Canal and the Baltimore & Ohio Railroad as to which represented the more stable form of transportation and would have the right to build along the Potomac River to Cumberland; or of the early horse cars out of Baltimore, as well as trains propelled by sails and treadmills; and the Relay Bridge, built in 1835, and still in service—to mention only a few highlights?

Let's pause now and look over the railroads operating in Maryland today, as well as some of those which have been abandoned. Here are those which can still be seen:

Baltimore & Annapolis (electric line).
Baltimore & Ohio.
Canton (switching road; not shown on map).
Castleman River (small coal road).
Cumberland & Pennsylvania.
East Washington (switching road; not shown on map).
Maryland & Pennsylvania.
Norfolk & Western.
Patapsco & Back Rivers (switching road).
Pennsylvania.
Potomac Edison (electric line operating the Hagerstown & Frederick).
Preston (small coal road).
Western Maryland.

And among those of the past are:

Chesapeake Beach.
Emmitsburg.
Washington, Baltimore & Annapolis (electric line).
Washington, Brandywine & Point Lookout.

Maryland is one of the 13 original states, with an area of 12,327 square miles. Its population is 1,821,000, of which the urban territory contains over three-fifths. The capital city is Annapolis and, interestingly enough, it is the only state capital without a steam railroad. (To be sure, this is stretching a point, for Nevada's Carson City has only tri-weekly service—and mixed at that—on the Virginia & Truckee.) The largest city in Maryland is Baltimore, with approximately 860,000 population. Second largest is Cumberland, far behind with a shade under 40,000. Hagerstown has 32,000, and Frederick is a poor fourth with 16,000.

The Potomac River winds along the south boundary of the state, separating Maryland from Virginia and West Virginia. West of Hagerstown, the Western Maryland hugs the north side of the Potomac. The Baltimore & Ohio is across the river, but that makes it in West Virginia, and another story.

The western part of Maryland is enriched with coal, which is of two varieties and is by far the most valuable mineral resource of the state. The deposits are confined to western Allegheny and Garrett counties and are a part of the great Appalachian coal field, which extends from Pennsylvania southward into West Virginia. Coal is one of the chief sources of tonnage for both the Western Maryland and the B&O, while the small Cumberland & Pennsylvania lives almost entirely from this type of revenue.

In order to keep the record straight, I have separated the main sectors of the state, working

from east to west. There is insufficient space to do more than point out some of Maryland's more important and thrilling railroad localities.

THE EASTERN SHORE: Unless you are a Pennsylvania fan, just skip the Eastern Shore, for the Pennsy operates all rail lines in that sector. The main artery is the New York, Philadelphia & Norfolk branch. (The NYP&N is familiarly known as the "Nipp-an-en.") In Maryland this line begins at Delmore, so named because it is right on the Delaware-Maryland line, and operates through Salisbury and Princess Anne to Beaver Dam, then plunges into Virginia for the final lap on its Wilmington-Cape Charles run.

The old Baltimore & Eastern has been taken over by the Pennsylvania, and while many of the original lines remain, practically no scheduled train service is being performed. The Franklin City Branch leaves the main line in Delaware at Harrington, enters Maryland just below Selbyville, and after passing through Berlin and Snow Hill, terminates just across the Virginia state line at Franklin City. Another line of the Pennsy leaves the main stem at Kings Creek, just south of Princess Anne, and runs to the edge of Chesapeake Bay at Crisfield. Several other small branches may be found between the bay and the Delaware boundary.

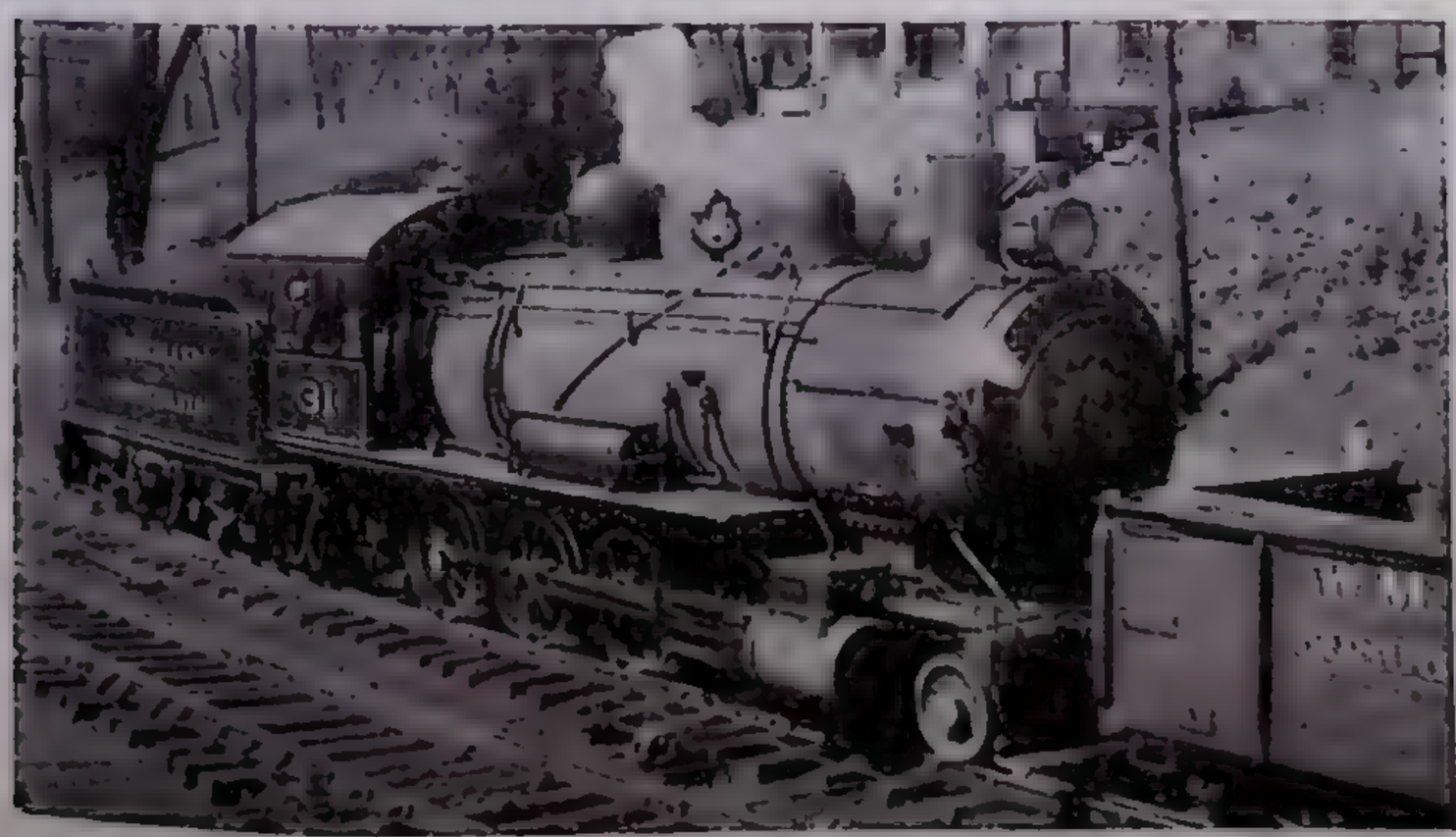
As might be expected from such flat terrain, long trains are found here. Much of the freight tonnage is floated from Norfolk to Cape Charles, this being an alternate south-north route to the all-land route via Potomac Yard near Washington. But a great deal of it also originates in Maryland and Virginia, where the chief products are potatoes, fruits and tobacco. Several symbol freights are operated in both directions between Bellevue Yard (Wilmington) and Cape Charles, with augmented service north of Delmar. This entire line is known as the Delmarva Division of the Pennsylvania, and while not on the same plane with many of the road's divisions, it is well worth several days' visit. K-4's and L-1's are the chief motive power, but the many small branch lines afford an opportunity to study the smaller classes of power and all the romance that goes with short lines.

BALTIMORE AND VICINITY: Baltimore is a real beehive of industrial activity. It is the largest city south of Philadelphia (although Washington, D. C., has unofficially passed it in the last year or two). Long one of America's leading seaports, in normal times the railroads bring large trainloads into the Monumental City (so called because of its Washington Monument, erected in 1815) for exporting from their own piers. The Western Maryland has its Port Covington, the Baltimore & Ohio has Locust Point and Curtis Bay, and the Pennsylvania has Canton. And in between are two small switching roads—the Canton and the Patapsco & Back River—bisecting and connecting the various lines and piers.

The Baltimore & Ohio had its birth in Baltimore in 1827, and its first line extended from Baltimore to Ellicott's Mills (now Ellicott City), with a change of horses at the old Relay House. With such an early start, the B&O managed to cram some sort of branch line into just about every corner of the city, although in later years the Pennsy has taken long strides toward matching this early start. Western Maryland and Maryland & Pennsylvania industrial lines are quite meager compared to the two main roads.

Railroad electrification had its beginning in Baltimore through the Howard Street Tunnel (1½ miles) of the Baltimore & Ohio. This still continues in service, with eastbound trains (including the steam locomotive) drawn by "white coal" from Camden Station to Waverly Tower—3½ miles—the motor being

Pushing on toward Cumberland, little No. 31, 2-8-0, furnishes the power for a freight train on the Cumberland & Pennsylvania Railroad.



Frank Quin.

Donald W. Furler.

Western Maryland 4-6-6-4 No. 1211 helps 2-10-0 No. 1114 climb this grade into Hagerstown Yard.

cut off at the latter point "on the fly." Westbound trains with steam locomotives roll through the tunnel by gravity, thus eliminating practically all smoke nuisance.

The Western Maryland operates its 900-series Mallet engines to and from Port Covington, as well as its 800-series Consolidations, the latter being the heaviest engines of that type in the world. Since the grade starting right out of Baltimore varies from 1.52 per cent to 1.78 per cent, this form of power is obviously not out of place so near the eastern seaboard.

Pennsy trains on the through New York-Washington route are for the most part electrically drawn, but the line to Harrisburg is handled by standard types of steam power, with most passenger trains doubleheaded because of the heavy and winding climb over New Freedom Hill.

If one searches hard around the North Avenue Viaduct, he will find the Maryland & Pennsylvania's small station buried underneath. The roundhouses and shops can be seen from the Falls Road, which follows along the line for the first three-quarters of a mile out of the station.

East of Baltimore, both the Pennsylvania and the Baltimore & Ohio have exceptionally fast tracks, each with a high double-track bridge over the Susquehanna River. The lines parallel each other only near Bay View and from Aberdeen to the river, but occasionally one is lucky enough to witness a good race. In this stretch may be found (at Swan Creek on the B&O) the only track tanks in the state. The Pennsylvania formerly had them at Stony Run, between Washington and Baltimore, and at Edgewood; however, with the coming of the electrics, they were taken up. At Perryville, the Pennsy has

Moving slowly up the same grade is this B&O coal train, helped by two WM engines (not visible).

Donald W. Furler.

a very important freight line running up the Susquehanna River through Port Deposit to Harrisburg, this line also being electrified.

Around Washington: While not in Maryland, Washington, D. C., is so nearly a part of the state that any article on Maryland railroads should also take in the nation's capital. The Baltimore & Ohio works into the city from both the east and west. It also has a branch which takes off near Hyattsville at Alexandria Junction and goes south into Potomac Yard, as well as another branch leaving the Metropolitan Branch (the line west) at Georgetown Junction, eight miles out of Washington, swinging around in a wide arc, to terminate at Georgetown, D. C.

The Pennsylvania and the B&O had many fights over the Pennsy's entrance into Washington, and after repeatedly being bested in the courts, the PRR finally secured permission to build a line from Baltimore to Popes Creek, with branches not to exceed 20 miles. It was a simple matter to run a branch line off at Bowie, which reached Washington well within the provision. The original Penn line swung down through Anacostia and into Washington near the Mall, but with the opening of the new Union Station, the Magruder Branch was built from Landover into Washington, and the old line was relegated to freight service only.

Just seven miles out of Washington, and only a stone's throw from the District line, is the B&O's suburban station at Silver Spring. All trains stop here, and when the war is over, plans call for one of the finest of modern suburban depots. Silver Spring itself is a community of around 10,000, but the big drawing point is its accessibility to most of the residential sections of Washington, avoiding the trip through traffic to the Union Station and saving considerable time for westbound passengers. The circus coming to town has nothing on Silver Spring in appeal to children, for on a good summer Sunday afternoon, youngsters flock from far and wide to see the trains come up the hill and make the station-stop. As a matter of fact, so much congestion resulted at one period that it was necessary to have a policeman on hand to keep the children—and adults too—back from the tracks.

Ivy City roundhouse and Washington Union Station have been covered in Trains before [Jan. '42; Dec. '40], so they will receive only this passing mention.

Foothills of the Blue Ridges: Frederick occupies a unique spot; while it has two trunk-line railroads, it nevertheless is situated on only very obscure branches, with each company operating but one train a day—the B&O's being a gasoline car and the Pennsy's a mixed train. And that is Frederick's fault, for at the time the Baltimore & Ohio was building west, the city "brains" did everything possible to keep the iron horses out of their town, so that the animals and children would not become frightened. How many times Frederick has regretted this shortsightedness nobody knows, for the B&O by-passed the city, and other points such as Hagerstown and Cumberland became more active and important places. Worth seeing in Frederick is the old B&O station. Practically devoid of paint, it must be a hold-over from the Boston Tea Party days.

Only 3½ miles from Frederick to the south, however, is Frederick Junction, an important point on the Baltimore & Ohio's main freight line. Many trains pick up helpers going east from this junction, and a stopover there seldom fails to reward the railfan with some kind of activity.

Seventeen miles north of Frederick is Thurmont, where the Western Maryland trains stop for a drink of water before tackling their Blue Ridge Mountains grade. For over 10 miles they climb at 2.06 per cent, which is going uphill in anybody's language. On top of this mountain, Pen Mar and other summer resorts may be found. They were once an important source of revenue to the line, but the automobile and seashore resorts have reduced this business to practically nothing.

The PRR Patriot is headed from Washington to New York behind a GG-1. From New York it will be hiked to New Haven by an NYNH&H electric locomotive. The journey to Boston will be completed with steam on the head end.

H. W. Pontin, Railroad Photographic Club

HAGERSTOWN: No doubt, many railfans have heard of Hagerstown, but probably few realize just what a live spot it really is. First of all, four important railroads enter the city: Baltimore & Ohio, Norfolk & Western, Pennsylvania, and Western Maryland. For the electric fans, the Hagerstown & Frederick still has a short six-mile line running regular cars to and from Williamsport. In addition, Reading engines handle freights (in a pool with Western Maryland power) from Rutherford Yard at Harrisburg, and the Baltimore & Ohio's giant 6100- and 6200-type Santa Fe engines move in over the Western Maryland tracks from Cherry Run. Sound interesting? Well, it is!

For the Norfolk & Western, Hagerstown is the northern terminus of the Shenandoah Division, and important interchanges are made with the Cumberland Valley Branch of the Pennsylvania Railroad, and to a lesser degree with the Western Maryland. Mallets and Mountain types predominate in power, and they are kept in spic-and-span condition, as is the roadbed and entire property. Shomo Yards are just south of the city.

From Hagerstown to Harrisburg, the Pennsy does some heavy-duty coal railroading, although the line south from Hagerstown to Winchester is of lesser importance. Much of the tonnage is turned over to Pennsy as just mentioned, by the Norfolk & Western; however, the Baltimore & Ohio does interchange a small amount at Cumbo Yard, across the river in West Virginia.

The railfan will not want to miss the Western Maryland roundhouse, for there may be found the heavy Consolidations of the Western Maryland and the Reading, the new articulateds and the old Mallets, as well as the world's heaviest Decapods of the Western Maryland, and the B&O's Santa Fe's. The WM fans out from Hagerstown in three directions—one might almost say four: west to Cumberland, east to Baltimore as well as Gettysburg and York, and north to Lurgan-Shippensburg (for through movement beyond on the Reading). Besides, Hagerstown is at the top of Williamsport Hill, and all coal drags as well as some of the heavier symbol trains require Mallet helpers for the climb.

By looking at the B&O's map, one might gather that Hagerstown is on only a small and insignificant branch from Weverton. In a way, this assumption is right, but, trains to and from Cumberland take trackage rights into Hagerstown over the Western Maryland. Traffic is light on the Washington County Branch (Weverton-Hagerstown), but the line is kept up as a heavy-duty stem, since it frequently becomes an important link when detouring is necessary.

A few miles south of Hagerstown, running almost east and west, is State Highway 68, which, in the first five miles east from the Western Maryland tracks in Williamsport, crosses in succession the Pennsylvania, the Norfolk & Western and the Baltimore & Ohio. Back in the days when gas was plentiful, a favorite recreation was to park the car midway in this section, and at the first signs of smoke (it's all open country) dash for the tracks in question. It was really exciting, and certainly provided a variety in trains.

CUMBERLAND AND THE ALLEGHENIES: The Queen City of the Allegheny Mountains probably puts out more action per train-hour than any other point—or at least more *exciting* action. Just north of the city is the famous Narrows, where four railroads, a highway and Wills Creek use the passage to get through the high mountains. The Western Maryland has its own line, and, after passing through on the west side of the Narrows, it heads for Connellsville. The Pennsylvania uses WM tracks all the way to the state line, although its traffic is rather inconsequential. On the east side, hugging the cliff under Lover's Leap, is the Baltimore & Ohio,

Optional routes.

For the benefit of those who must travel but who cannot get accommodations by their usual route, TRAINS each month will print a brief listing and survey of available routes between larger cities.

Chicago and Denver:

Burlington—Via Galesburg, Burlington, Ottumwa, Omaha, Lincoln. Three trains daily, one an overnight streamliner.

North Western - Union Pacific—Via Clinton, Omaha. Two trains each way, one an overnight streamliner.

Rock Island—Via Davenport, Des Moines, Omaha, Lincoln. One overnight streamliner on slightly longer than competitive schedule.

Santa Fe—Via Galesburg, Fort Madison, Kansas City, Emporia, Newton, La Junta, Pueblo. Two trains each way on longer schedules than direct routes. Sleeper service available with change of cars during waking hours at Kansas City.

heading for Pittsburgh and Chicago. The Cumberland & Pennsylvania uses these tracks through the Narrows, and then turns west for Frostburg, where it turns south for Piedmont, W. Va. The Baltimore & Ohio and the Western Maryland also have lines running southwest out of Cumberland along the Potomac River—the B&O destined for Cincinnati and St. Louis and the Western Maryland for Elkins.

Sitting anywhere in Cumberland, one can see all sorts of excitement and activity. The Baltimore & Ohio runs right through the heart of Cumberland, and its famous (and antique) Queen City Station, erected in the '70's, is one of the city landmarks. The Western Maryland has a much nicer-looking station, but oddly enough it handles practically no passenger business.

Engines! Name them, and Cumberland has them. There are Atlantics, Pacifics, Hudsons, Ten-Wheelers, Consolidations, Mikados, Decapods, Mallets, Santa Fe's, and even one of the Western Maryland's Shay geared locomotives. Actually the WM roundhouse is in Ridgely, just across the river in West Virginia, but unless one carries a map, he probably won't even know he has gone from one state to the other. And, of course, whether he likes them or not, he'll be bound to get some kind of a thrill when one of the giant 5400-horsepower Diesels of the B&O rolls out of town with 100-odd cars, off to tackle the Allegheny Mountains. Three passenger trains each way through Cumberland are also propelled by Diesels.

A recent 2½-hour visit to the Baltimore & Ohio's Viaduct Junction Tower, a half-mile west of Cumberland, produced a total of 13 through freights, five passenger trains and a light road engine. Considering that the freights are just getting under way, and some take as much as four or five minutes to pass, there weren't many moments when something wasn't stirring. The first section of a fast freight west, No. 97, that evening walked out of town with 102 cars and Santa Fe engine No. 6205. A helper was, of course, picked up at Hyndman, 13 miles north, for the main part of the climb over the mountains. Twelve minutes later, Diesel engine No. 3 followed in its smoke with 97 cars. Mallet engines generally draw trains on the Grafton line, and five of them were so powered. Incidentally, previous visits to this same point have produced even more trains on certain days of the week. The date referred to here was a Sunday.

Sometime during the day, among all the other activity, you will hear a little chugging, and look up to see one of the small Consolidation engines of the Cumberland & Pennsylvania. They look almost like toy engines, compared to the giants of the Western Maryland and the Baltimore & Ohio. But they all run on track of the same gauge.

The Cumberland & Pennsylvania was the first through railroad in the Georges Creek coal basin, and still the only one traversing the entire region. It is nearly 100 years old, and makes use of several switchbacks. The line has been owned by the Consolidation Coal Company since 1864, and this in itself gives an inkling of its stability. Since its inception it has moved more than 150 million tons of bituminous coal to all parts of the world, and, judging by the large deposits still remaining in the Georges Creek basin, many millions of tons will be shipped out of the region in the future.

Shops are maintained at Mount Savage, and the line discontinued passenger service just recently. The C&P owns 11 locomotives (all freight) and about 140 freight cars. Its right of way through the Cumberland Narrows from Mount Savage Junction (near Corrigansville) to Viaduct Junction, three miles—all triple-track—is leased to the Baltimore & Ohio.

THE SHORT LINES: The East Washington switching railroad near Seat Pleasant is all that remains of the old Chesapeake Beach Railway, which used to run all the way from Washington to the bay resort of that name. It was a steam line, and in the days before the automobile, it carried many a passenger. In its closing days, mail was handled in a small Ford automobile which ran on the rails after conversion by the line in its own shops.

The Emmitsburg Railroad formerly connected the town of that name with the Western Maryland at Emmitsburg Junction, a distance of 7½ miles. In its waning days, the line was kept in operation primarily to transport students into Mount St. Mary's College at Emmitsburg.

Both the Castleman River and the Preston are coal railroads. The former operates north of Bittinger to the Pennsylvania state line near Worth, about 14 miles, while the latter operates south from Hutton into the coal mines at Laurel Run, some seven miles. Both roads connect with the B&O.

Both the Canton and the Patapsco & Back Rivers railroads are industrial and switching lines in and around Baltimore.

William Moedinger Jr.

Midshipmen crowd such cars as this, one of the 200 series on the Baltimore & Annapolis line.

Uncle Sam owns three railroads in Maryland, one extending from Aberdeen on the Pennsylvania into the Proving Grounds, and another from Waldorf on the Pennsy's Popes Creek Branch over to Indian Head. In addition, parts of the old Washington, Brandywine & Point Lookout have been hooked up with the new railroad to Solomons Island.

ELECTRIC LINES: Two electric lines are left in Maryland: the Baltimore & Annapolis and the Potomac Edison. The former is the old North Shore Division of the once-important Washington, Baltimore & Annapolis, which had the misfortune to fold up before Fort Meade came back into prominence. No doubt if it were still functioning, it would be doing a rip-roaring business now.

The Potomac Edison consists of most of the former lines of the Hagerstown & Frederick, and the present service operates from Frederick to Middletown, Myerstown and Thurmont, connection being made at the latter point with the Western Maryland. The line is not of a particularly heavy construction, but freight cars are interchanged with the connecting steam pikes. In addition, grades are steep, but the scenery is wonderful, particularly from the top of Braddock Heights.

Although the Baltimore & Annapolis is one of the lesser-known Maryland railroads and might well be termed a glorified streetcar line, it was originally started as a steam road, and, while never a particularly large nor important line, it has played its part in history and today represents the only rail entrance into Annapolis, the state capital.

The original line started in 1836 as the Annapolis & Elk Ridge, running from the state capital to a connection with the Baltimore & Ohio known as Annapolis Junction (now Fort Meade Junction), a distance of 21 miles. Connection was later made with the Pennsylvania main line at Odenton. Oddly enough, the route never came within nine miles of Elk Ridge. The early history of the line was most interesting, and it did well through most of the nineteenth century. Through cars were operated from Annapolis to Baltimore, first via the B&O and later over the Pennsy. Competition in the form of the Annapolis & Baltimore Short Line entered the picture in 1887. Later the Annapolis, Washington & Baltimore, which was a holdover from the Baltimore & Drum Point (never built), then took over both lines, and in 1907 we find a line being built from Washington to Baltimore, and the entire group being reorganized as the Washington, Baltimore & Annapolis. Competition, offered by the B&O and Pennsy, was keen from the beginning, and with the coming of the automobile the line suffered very trying times. A temporary boom was afforded by the establishment of Camp Meade during the First World War, but after that the line never did well, and finally folded in 1935.

The old Short Line was then sponsored by the Baltimore & Ohio as the Baltimore & Annapolis; both the Federal Government and the Pennsylvania were asked to take over the old Annapolis & Elk Ridge section, but refused. The main line from Washington to Baltimore is now a mass of weeds, although the building of a "dream" highway along the right of way has been discussed.

The present Baltimore & Annapolis is doing very well for itself. It has 35 cars and about 130 employees, running 25 round trips daily. The Baltimore & Ohio frequently runs steam trains over the line, as there is a great deal of business, particularly to and from the Naval Academy. However, to do this the line—particularly the Severn River bridge—had to be rehabilitated. Now engines as heavy as the Class P-5 Pacifics (58,500 pounds per axle) can use the line. For the Army-Navy football game in Philadelphia, the B&O operates seven specials of eight cars each, one right after another. Needless to say, the electric cars spend a great deal of time in the sidings on these days. The old terminal in Baltimore is now a bus depot, and arrangements were made for the electric line to use the Camden Station of the B&O, coming on its tracks near Carroll Tower, some two miles out.

It is interesting to record that, just prior to its abandonment, the Washington, Baltimore & Annapolis was running some very fast trains

Courtesy Baltimore & Ohio.

Historic Harpers Ferry, where B&O trains cross the Potomac River on the two bridges nearest camera.

with its articulated cars. Several of the expresses were scheduled to cover the 24.7 miles from Whites Crossover (just outside of the Washington city limits) to Linthicum in 21 minutes, for an average speed of 70.6 miles per hour. The entire time for the 39.9 miles from downtown Baltimore to downtown Washington (a half-hour in Washington streets alone) was but 65 minutes.

HERE AND THERE: The largest freight yards on the Baltimore & Ohio system are at Brunswick, with a capacity of well over 5000 cars. These tracks extend a distance of nearly six miles, close to the Potomac River and the abandoned Chesapeake & Ohio Canal. The roundhouse at this point is one of the most active on the B&O. Trains are classified westbound only.

Enginemen frequently curse, sometimes softly and sometimes loudly, when they approach Relay Curve on the Baltimore & Ohio, for they must slow down to 35 miles per hour. But to the eye, the 109-year-old Thomas Viaduct is a thing of beauty. Built in 1835, it still is just as substantial as ever, carrying the heaviest locomotives and trains without a murmur. As a matter of fact, its engineer and builder was so sure it would stand for years that he erected a monument to himself, which still stands at the east end of the viaduct. Immediately adjacent is the historic Relay House station. No longer rating an agent, the rooms are used by section foremen, and at one time there was a model railroad upstairs.

Both the Western Maryland and the Baltimore & Ohio have their general offices in Baltimore. The main shops of the former are at Hagerstown, while those of the B&O are at Mount Clare in Baltimore. Maryland & Pennsylvania shops—although quite small—are also in Baltimore. Cumberland & Pennsylvania shops are at Mount Savage.

Bearing west from the Baltimore-Washington line of the Baltimore & Ohio at Relay is the historic Old Main Line. Most through freights use this "iron," for in addition to saving about 14 miles on the route through Washington, the grades are easier and the freight is thus kept separate from the passenger traffic. The only passenger service remaining on this line is one gasoline car a day. This branch recently has been receiving a great deal of attention, primarily due to the heavy wartime freight movements, and automatic block signals have been installed eastbound from Point of Rocks to Mount Airy Junction. Where there were formerly but two intermediate continuous train-order stations, there are now five within the 58 miles. In the early days of service—and this was the original line of the B&O—trains were carried over parts of the line by inclines, and a station called Plane No. 4 still stands west of Mount Airy Junction. A freight cutoff handles most of the traffic between Watersville Junction and Mount Airy Junction, the only service via the old line (which has a much steeper grade) being the passenger train and way freight. The B&O once planned to hook up this line with the east end by a cutoff which would have extended from Gorsuch (20 miles west of Relay) to Van Bibber (24 miles east of Baltimore).

W. H. Thrall Jr.

With its caboose still out of sight beyond the curve, this B&O freight train is nearing Hagerstown, Md. Powered by Engine No. 6209, a heavy 2-10-2, the train began its fast run in Cumberland, Md.

Even though it happens at nighttime, one of Maryland's supreme thrills can be found on the 17-Mile Grade, for every night (except Sunday) the B&O's *National Limited* heads west up this winding 2.2 per cent climb (116 feet to the mile) with 247,500 pounds of tractive power. On the head end will be found a Q-4 Mikado and a 4000-horsepower Diesel, and on the rear is an S-1 Santa Fe. The rhythm which they toss to the high heavens as they blast their way to the top of the Allegheny Mountains is a thrill that can never be forgotten. At Altamont, helpers cut off of both ends, and six miles west, the Diesel will be roaring through Mountain Lake Park at a mile-a-minute clip on the only really good-running track west of Cumberland. Lots of railroading goes on over this mountain, and the weather is a long way from mild when Old Man Winter moves in.

The Western Maryland's Allegheny Mountains climb begins right at the Narrows, and consequently the major part of it is in Maryland; however, the Baltimore & Ohio swings north first to Hyndman, Pa., before turning west and going up Sand Patch grade. Neither of these pulls is as steep as the 17-Mile, as they are slightly less than 2 per cent.

If I have seemed too enthusiastic over all this mountain railroading, perhaps I may be excused by saying that it never fails to raise my blood pressure several hundred per cent when doubleheaders and pushers dig in their toes for a climb up the mountain. However, for those who like high speed and lots of it, Maryland has plenty of that, too. Following is a list of trains which were seen passing a point a half-mile east of Aberdeen on their way to the Army-Navy football game in 1941:

Baltimore & Ohio

No. 2, Engine 59	9:23	Extra, Engine 5214	10:16
No. 35, Engine 5315	9:32	Extra, Engine 5316	10:21
Extra, 5008-5313	9:38	Extra, Engine 5302	10:26
Extra, Engine 5311	9:42	Extra, Engine 5318	10:30
Extra, Engine 5212	9:50	Extra, Engine 5319	10:35
Extra, Engine 5209	9:55	Extra, Engine 5301	10:42
Extra, Engine 5224	10:01	Extra, Engine 5303	10:52
Extra, Engine 5226	10:06	Extra, Engine 5308	10:56
Extra, Engine 5228	10:11	No. 6, Engine 5306	11:03

Pennsylvania

No. 1/124	9:10	No. 1/126	10:29
No. 2/124	9:18	Extra	10:37
No. 403	9:39	Extra	10:43
Extra	9:46	Extra	10:47
No. 122	9:57	Extra	10:53
Extra	10:06	No. 2/126	10:56
Extra	10:10	Extra	11:02
No. 109	10:13	Extra	11:09
Extra	10:14	Extra	11:14
Extra	10:18	No. 174	11:18
Extra	10:24		

B&O engines are given by numbers, but since all Pennsy trains are handled by GG-1 electrics, they are not specifically mentioned. All extras shown operated eastbound. Both roads have only two tracks at this point, and the average speed of the trains passing was about 80 miles per hour on the Pennsy and 75 miles per hour on the B&O. There weren't many moments when something wasn't passing or approaching. The PRR had two westbound freights during this period; however, for the most part, freight was "put away" during the peak movement of the eastbound trains. The show coming back was not so heavy, since the midshipmen remained in Philadelphia until later in the evening. The 5200-series engines operated the Annapolis trains, except that the 5316 was put on the Annapolis general-public train in the Baltimore yards.

Well, that's Maryland—not a large state, but within its borders is nearly every kind of railroading, with the possible exception of narrow-gauge. And to any railfan who might like to see for himself, Maryland extends a welcome.

The Maryland & Pennsylvania owns four cabooses, three like this four-wheeler and one eight-wheeler.

J. Lawrence Dixon, 5132 Locust St., Philadelphia, Pa.

ALL THE *Comforts* OF ROAM!

The day is coming when a train trip will again be something to look forward to eagerly — something to be enjoyed at ease, in spacious comfort — and all at moderate price. That of course will be after the war is won. It will be when the armed forces no longer need nearly half of all our passenger equipment to move fighting men. It will be when many coaches and Pullmans now busy in war service can be honorably retired to make way for new cars with comfort, convenience and thoughtful appointments beyond anything the past has known. That will take money — vast sums of money. It will take time. But we believe that it is worth while today to tell you what we plan for tomorrow — to help you realize that the wartime service we are able to give today is by no means a sample of what's in store for the future.

ASSOCIATION OF
AMERICAN RAILROADS
ALL UNITED FOR VICTORY

By Edward Hungerford:

The Man in the Tower

ELEAZAR LORD was the first president of the Erie Railroad; he was also the third and seventh president of that ambitious enterprise. He had a record of riding in high favor with his fellow directors, then of being shoved, more or less gently, to one side, only to reappear again apparently stronger than ever before. . . . He was a man of determination. He was filled with quaint ideas. When the Erie first was being definitely planned back in 1832, it was Lord who insisted that it be built on tall piles through the lowlands of the Susquehanna Valley in order to avoid the floods; and so eventually it was built—at a cost of a million precious dollars —and never used. Lord also insisted that the Erie be laid to a six-foot gauge, and what that cost the road in through traffic before it was finally rectified no man will ever know. . . . He held to a theory that the locomotives upon the Erie might some day come to weigh as much as 20 tons each and that that would be entirely too much weight for an engine upon a track of but 4 feet 8½ inches in width. The astonishing thing was that he made his fellows believe these things and invest the road's money in them.

Eleazar Lord came from New England, where he had trained for the ministry. He studied at Andover and at Princeton but he never accepted a pastorate. His health failing for a while, he turned toward commercial and financial affairs, in which he became preeminently successful. At 33 he organized and became the president of the Manhattan Fire Insurance Company, which paid annual dividends of nine per cent, and he held that job for 12 years. Following that he became the president of the New York & Erie, as it then was called, and he was the outstanding figure in the undertaking.

As a minister of the gospel should be, he was a loquacious fellow, quick on his feet and possessed of both wit and repartee. Better still, he had a gifted pen. For this, both Dartmouth and Williams colleges conferred degrees upon him. He was a pamphleteer of renown and a propagandist of great ability, which was just what Erie needed there at the beginning. He was a many-sided man; to him is given the credit for having laid the foundations for the present national banking system; and even in his busy years as president of Erie, he managed to find time to write five books on scientific and religious subjects. There was no end to his versatility.

ALL this is prelude to a very rare little book which lies upon the desk of the Man in the Tower. It is entitled *A Historical Review of the New York & Erie Railroad*. Eleazar Lord wrote it in 1855, four years after the road finally had struggled through to its announced western terminus at Dunkirk and 10 years after his final term as president.

To put it mildly, the book was critical of the men who were running the affairs of Erie in the mid-'50's. Lord was especially enraged at the then chief engineer of the road, Major Thompson S. Brown, who consistently had opposed him on three separate counts: the extravagant plan for building an elevated railroad of wood for a hundred miles through the Southern Tier of New York; the almost unworkable idea of the six-foot gauge; and, finally, the location of the eastern terminal of the road at Piermont on the west bank of the Hudson, 26 miles north of New York, where Lord had his country seat and large land holdings.

At this late day it is difficult to say which was the worst of these three errors of Erie. The absurd elevated railroad, when once constructed, was never used; but the six-foot gauge hung on for 40 years, even though much third rail was laid within it to bring it to standard gauge for connecting roads. At one time the wide gauge extended from New York (Jersey City) to Canandaigua, to Rochester and to Buffalo; and, by connecting roads, to Albany, to Cleveland, to Cincinnati and even to St. Louis. It cost a great deal of time and money to bring it all back to standard gauge, which, as every school boy knows, is that fixed by the Romans for their carts and adopted by the British for the roads of rails upon which these carts, with flanged wheels, began to run. It was brought over to the United States with the first importations of English locomotives and so established itself. There are many honest and obvious points in favor of the wide gauge; the so-called standard gauge merely outdistanced it.

BUT the thing that really grieved Eleazar Lord was that no sooner was the Erie completed through to Dunkirk than his beloved Piermont was abandoned in favor of a far more direct route to New York by way of Paterson and Jersey City. That hurt. It more than hurt; it angered him. In his *Historical Review* he waxed wroth over the whole business. He averred that the new way of going by through train to Jersey City and crossing to Manhattan from there was ". . . inconvenient, uncomfortable and in every way exceedingly distasteful, compared with a sail of an hour and 15 to 20 minutes to Piermont, on a fine, roomy steamboat . . . and a leisurely and comfortable breakfast served, toilets arranged, cheerfulness maintained and agreeable forebodings of the journey rendered prevalent; a satisfactory, pleasant bouyant start on a journey of four or five hundred miles being more important to the health, comfort and good spirits of the travelers than any possible appliances after a vexed, dispiriting and odious beginning. . . . The hurried landing at Jersey City, the crowd, the confusion, the delay, the mud, are offensive and intolerable, compared with that on the quiet, ample, unobstructed pier-head at Piermont. . . . The peril of delay or collision at Bergen Ridge from the approach of trains of various lines and the danger from the drawbridges on the line being every day and all hours equally to be met, must be contrasted with the entire freedom from such hazards on the Piermont route," etc., etc.

There are very few points that the first president of the Erie, still battling for his beloved Piermont terminal, seems to have missed.

HE WAS at his best, however, when, forgetting the Erie for the moment, he discussed railroad management in general. He believed that there were great practical errors in the distribution of administrative powers and duties by railroad boards of directors, especially

when there were financial difficulties to take considerable time of the president and the more efficient directors away from the operating problems of the road. "The two kinds of business," he said, "are as widely different as any two kinds of business that can be named. A man may have skill and tact as a financier, who is totally disqualified to conduct operations on a railroad." He went on to say:

"A president and directors who, however, are skillful financiers may be absolutely necessary when much of that business must needs be done. And it cannot reasonably be expected in any case that such men . . . selected to be directors on account of their known competency and success in their private business, should have the variety of practical knowledge and experience which is requisite to the satisfactory and successful working of a railroad. Such knowledge and experience are not born with men. Most men are incapable of ever acquiring them. . . . The superintendence of a railroad is a profession . . . which requires as much talent, knowledge, training and experience to do it justice as are required in the command of an army, or of a ship of war. . . ."

Eleazar Lord believed that a man who has had such training and has, in other respects, the requisite character, is the man best fitted to be the head of a railroad company—to head it, if possible, from the very commencement of its surveys and construction (one sees the shadow of Lord and the New York & Erie in this), but especially after the operation of the road begins. He believed that the president of a railroad should assume great responsibility for its operation, and said:

"It would be far safer to rest it on one man, competent by his talents and experience, than on any board of directors however respectable, or on the executive of any board unless he had by study and practice become master of his profession; and in that case his position should be not that of president—not in the routine of ordinary duties in the office of the company, but on the line of the road—he should be the acting superintendent, with all the character and authority implied in the office and title of president. Every company needs one such man, and but one; and can afford adequately to compensate one such. But if the responsibility rests back of the superintendent, in the board of directors it amounts to little or nothing. . . . If it rests on no individual in particular, no one feels or will own it. . . ."

Acting upon this theory, Lord suggested that the most important and responsible post on a railroad be assigned to one man as combined president and superintendent, passing his time and performing his duties on the road itself. He further suggested that the vice-president, the acting executive, remaining in the office of the company, also be its treasurer. Still another of his suggestions was that there be a supervising committee of three or more stockholders—working independently of the directors—to go over the road each week, ascertaining the feeling among the patrons and the employees toward the property, and having access to all its records. He added:

"Such an independent commission . . . should be paid for their services and have no other than a conservative and advisory responsibility in respect to the interests of the stockholders. Being appointed by the same votes by which the directors are appointed, their mutual relations might be harmonious and cordial."

Eleazar Lord's final note of advice, written 89 years ago, has pith and point even to this day:

"To the stockholders of railroad companies it requires to be said: You are virtually guilty of the abuses, maladministrations and various evils caused to yourselves and others by those whom you appoint to manage your affairs. What you do by them, you do by yourselves. Those you appoint may every one of them be such as to his personal character, position and relations in society that, individually, you would feel safe in trusting them with the management of your property. But when associated in a board their sense as individuals is merged into a vague joint responsibility, in which the share of each is small in proportion to the number of individuals associated. . . . When they act upon questions, their decision of which is not likely to affect their personal reputation—questions of the merits and tendencies of which they are incompetent to judge and in deciding which they may act blindly—great, paramount and irremedial evils may follow for which no one in particular can be held accountable."

So from the heart spoke the first president of New York & Erie, also the third and the seventh president of that road. His small book was to no small extent based upon his personal experience. Having retired from active railroading, he desired to set down principles that he felt were applicable to the business as a whole. If at times in later years his advice had been followed, there probably would have been less sadness in the hearts of both railroad stockholders and operators; unfortunately, these did not often seek advice, and oft-times came to their own destruction through that failure.

Edward Hungerford

"View on the Delaware": From an old print.

A Ton of Tools

By Roy L. Martin.

THUMBING through my old 1892 Wisconsin Central book of rules the other evening, I came across Rule 417—the Ton of Tools rule, the engineers called it. It was a whale of an important rule in those days, and compliance required such a full complement that present-day enginemen may find themselves amazed at the extensive scope of the regulation.

The lads of yesteryear were no brawnier than today's models of enginemen, but they had to be prepared to handle any emergency of locomotive breakdown. They had to be ready to get their engines going if, for instance, a valve yoke broke or an eccentric strap snapped. On these occasions the whole crew went to work, usually with the result that they "came in on one side," with the other valve and piston blocked and the main rod down and riding the pilot beam. The long pinch bar came in handy then to "pinch her off center" when, in making a stop, the good side unhappily came to rest on dead center.

Nowadays in similar breakdowns, the engineman merely wires the dispatcher and awaits the coming of machinists and the wrecker to tow him off and clear the main. Nowadays, too, locomotive main rods are many times heavier than those of the 1890 vintage, and they will defy the best efforts of a whole crew to budge them. These modern engines which operate so easily over a thousand-mile run may well cast a lofty eye on the old locomotives that carried an assortment of tools large enough to equip a roundhouse. But it will do the modern engineer no harm to give a thought to old Rule 417 and to appreciate the size of the "personal luggage" carried by every one of those earlier eight-wheeled Standards and Ten-Wheelers.

Here it is, old Rule 417: "Engineers must know that their engines are supplied with all proper tools and extra links and pins, and that they are in good order for use." And, as if the engineer didn't know the "proper tools," the following list was appended:

List of Tools.

One spanner wrench for air pump.
One spanner wrench for injector checks.
One open-end wrench for feed pipes.
One wrench for rod bolts.
One wrench for rod set-screws.
One wrench for eccentric straps.
One wrench for eccentric set-screws.
One wrench for cylinder heads.
One packing wrench for piston rods.
One packing wrench for valve stems.
One follow bolt wrench.
One wrench for pedestal brace bolts.
One wrench for wedge bolts.
One 15-inch monkey wrench.
One 10-inch monkey wrench.
One scoop shovel.
One ash hoe.
One splice bar.
One broom.
One water bucket.
One switch chain.
Two wrecking frogs.
One pinch bar.
One flat cold chisel.
One cape chisel.
Two engine jacks with levers.
One small jack and lever.
One hard hammer.
One soft hammer.
One hand saw.
One axe.
One grate-shaker bar.
One packing hook and iron.
One torch.
Two white lights (lanterns).
Two red lights (lanterns).
Two green lights (lanterns).
One blue light (lantern). [For work trains only.]
One extra globe for each signal color.
Two red flags.
Two green flags.
Three fusees.
Two one-quart oilers.
Six torpedoes.
One two-gallon engine-oil can.
One one-gallon valve-oil can.
One half-gallon signal-oil can.
One one-gallon headlight-oil can.
One hand-valve oil can.
Six flue plugs.
Two tender-truck journal brasses.
One engine-truck journal brass.
Two wedge blocks for raising engine.
One set hard-wood blocks for guides.
One bell cord for guide blocks.
Two crank-pin collars.
One relief-valve plug.
One extra air hose.
One extra water hose (tank hose between engine and tender).
Three extra links and pins.
Five extra headlight chimneys.
One ball of candle wicking.
Engineers will be required to make out monthly report as above, noting all deficiencies in the list of tools, and repairs needed to the tools on hand.

Even as late as 1890, coupling links and pins were important accessories in engine tool equipment. All of our railroads were slow to comply with the safety appliance law enacted March 2, 1893, and up to December, 1897, less than half of the freight cars in the nation were equipped with standardized automatic couplers. In 1892, the rear-end portion of almost every midwestern freight train included a number of "non-airs" and "mooly" cars, the latter with link-and-pin couplers. Out over these cars was strung the caboose signal cord, the free end

tied to the brake-wheel shaft of the rearmost air-braked car. The remaining 400 or 500 feet of the cord was wound on a large spool or reel firmly bracketed and secured to the framework of the cupola of the caboose.

On the outer edge of one flange of the reel, a six-inch metal hammer pivoted freely so as to strike an eight-inch saucer bell when the reel revolved. During the run, if any of the non-airs accidentally uncoupled, the reel, rope, hammer and bell went into violent concerted action with a clamorous alarm that never failed to arouse the sleepiest brakeman—an alarm commanding him to "go high" and get to work with his hickory brake club.

In addition to the company tools required by Rule 417 the engineer carried his own kit of handy tools and vital supplies, including the following:

One set of air-pump packing for steam and air ends of rod.

Six extra sight-feed lubricator glasses, with ring gaskets.

Two rod oil-cup wrenches.

Three extra water-column glasses and 12 rubber gaskets.

One set babbitt piston-rod packing rings.

One set babbitt valve-stem packing rings.

One pound white cotton waste.

Two pounds colored wool waste.

One set of packing hooks and irons for packing the cocks in cab. (These packing hooks and irons were finely finished tools, often furnished in neatly arranged sets in a leather case with the engineer's name imprinted on the cover.)

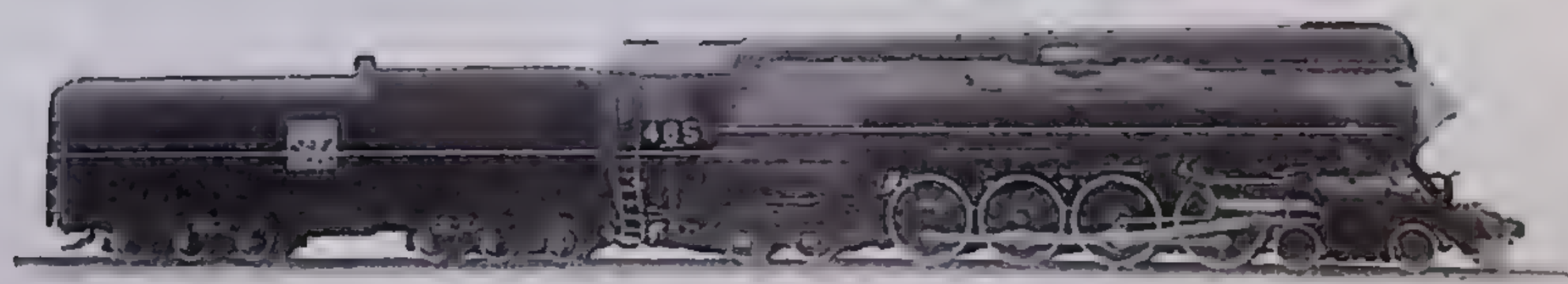
Soap and towels, for "washing up" on the engine at the end of the run; Dixon's flake graphite to soothe a hot pin; plumbago for polishing the boiler head; lampblack and signal oil to brighten the headlight reflector; Tripoli to polish the bell and brass trim.

All in all, these old-timers lugged around quite a staggering array of equipment to keep their engines in shipshape order. The tank boxes—the engineers' safety-deposit boxes—complete with heavy hasp and padlock, were built for rough usage and placed within easy reach of the crew. Made of stout oak 1½ inches thick, the old boxes loomed up like miniature log cabins with hinged-ridge roof heavily ribbed for protection against swinging coal buckets, coal chutes and falling lumps of coal.

Probably the full-blown mania for more and more engine tools flourished most luxuriantly on the Wisconsin Central during the administration of James McNaughton, superintendent of motive power in the 1890's with the Waukesha shops as headquarters. Here a special "engine tool department" held a spot alongside the rod and piston benches and, fully as important, was bossed with crusty vigilance by old Bobby Taylor, ex-roundhouse foreman at Chippewa Falls. Old Bobby was a great favorite with engineers because they knew full well that every last tool under Rule 417 would be in the right place when the freshly overhauled engine left the shops.

One of our modern engineers—strapping, white-haired "Big Silver" Frank Haddick, who pulls the streamliner *Rocket* between Chicago and Rock Island, Ill.—puts it aptly: "Those days are gone forever. Now all the tools we need are a pair of overalls, a time card and a 21-jewel Hamilton."

Western Pacific Calls for 6



This important link in our transcontinental rail service has recently added to its equipment six new Lima-built 4-8-4 locomotives. These are oil burners, and have a tractive power on the main cylinders of 64,200 foot-pounds, and 75,500 foot-pounds with Booster. They come at an opportune time to aid in handling the extremely heavy traffic induced by our war in the Pacific.

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Trackage Rights

NEARLY 28,000 miles of railroad in the United States is shared by two or more railroads under trackage-rights agreements. The quiz below lists railroads using mainline trackage of other railroads to reach certain cities. In many cases terminal railroad trackage is also used to enter these cities, but to avoid confusion strictly terminal trackage has been ignored in preparing the list of answers. Only the mainline trackage-rights approaches to the cities should be considered in giving your answer. Six right answers is an excellent score. Correct answers are given at bottom of page.

1. The Chicago, Milwaukee, St. Paul & Pacific reaches Seattle, Wash., over the tracks of the .....
2. The Illinois Central reaches Birmingham, Ala., over the tracks of the .....
3. The Michigan Central reaches Chicago over the tracks of the .....
4. The Chesapeake & Ohio reaches Washington, D. C., over the tracks of the .....
5. The New York Central reaches Louisville, Ky., over the tracks of the .....
6. The Great Northern reaches Winnipeg over the tracks of the .....
7. The Norfolk & Western reaches Cincinnati over the tracks of the .....
8. The Chicago, Rock Island & Pacific reaches Denver, Colo., over the tracks of the .....
9. The Wabash reaches Buffalo, N. Y., over the tracks of the .....
10. The Louisville & Nashville reaches Atlanta, Ga., over the tracks of the .....
11. The New York Central reaches Peoria, Ill., over the tracks of the .....
12. The Cleveland, Cincinnati, Chicago & St. Louis (Big Four) reaches Chicago over the tracks of the .....

Railroadiana

"A History of the North Pennsylvania Railroad," written by Jay V. Hare, secretary-treasurer of the Reading Company, may be had for the asking from Publicity Department, Reading Company, Reading Terminal, Philadelphia, Pa. The North Pennsylvania Railroad, now operated by the Reading under lease, is the Reading main line from Philadelphia to Bethlehem.

Answers to Trackage Rights quiz.

1. Pacific Coast Railway. 2. St. Louis-San Francisco. 3. Illinois Central. 4. Southern. 5. Baltimore & Ohio. 6. Canadian National. 7. Baltimore & Ohio. 8. Union Pacific. 9. Delaware, Lackawanna & Western. 10. Nashville, Chattanooga & St. Louis. 11. Peoria & Pekin Union. 12. Illinois Central.

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• • •

All the magazines in America, added together, USE only 5% of the nation's paper supply. Yet, out of this comparatively small amount, they are SAVING 450 million pounds this year and RELEASING it for vital war needs.

This advertisement, contributed to the war effort by this magazine, was prepared by the War Advertising Council in cooperation with the War Production Board and the Office of War Information

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RAILROADIANA

GRAHAME HARDY

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Builders' Catalogs Bought and Sold

538 - 15th Street
Oakland 12, California

COLORADO AND WESTERN RAILROADS—Over the Range to the Golden Gate in the '80's and '90's. Tourist Guide to Colo., N. Mex., Utah, Nevada, Calif., and the Great Northwest. By Stanley Wood. Illustrated, cloth binding, 283 pages—$2.50

ROME, WATERTOWN & OGDENSBURGH RR.—by Edward Hungerford. Illustrated. 269 pages, cloth binding. New copies of this complete history of the railroad, its planning, building and development. $2.50

FORNEY'S CATECHISM OF THE LOCOMOTIVE—by M. N. Forney. Complete with folding plates, illustrated. Section of advertisements with locomotive cuts, specifications. Various dates. Each—$3.50

MOODY'S MANUALS OF RAILROADS—Many maps showing all steam railroads in existence in the United States. Good copies for following years: 1928, 1929, 1930 and 1931. Each ——$5.00

WEST END STREET RAILWAY—Includes sketches of early Street Railways of Boston, consolidation of various lines. Foreign St. Rys.—The Berlin Viaduct. Anecdotes, etc. Illustrated. Boston 1892. Good copy of rare item. 269 pages, well bound. ——$17.50

OLD COLONY RAILROAD—Complete history from 1844. Hager & Handy, Boston, 1893. Includes list of Steam Railways of U. S. and Canada. Unique advertisements and many illustrations. 512 pages. $15.00

PACIFIC RAILWAY — WESTWARD BY RAIL—by W. F. Rae. N. Y., D. Appleton & Co., 1871. 301 pages, original paper wrapping, includes map showing lines of rail between Atlantic & Pacific with section of Pacific Railway. Exciting account of transcontinental travel and country traversed. Good copies. ——$3.50

What Is Your Favorite Railroad?

Let us try to locate association items for you.

If we know your special interest we will quote material as it is available.

A CORNERSTONE FOR ANY COLLECTION

An original issue of the

AMERICAN RAILROAD JOURNAL,

published in 1836

The masthead is a 3" x 5" cut of the DeWitt Clinton type locomotive, with tender and two coaches, followed by 16 pages of articles, letters, anecdotes and miscellaneous information as well as advertisements—typical during the genesis of American Railroads.

A limited number of this 108-year-old item available.

Fine Condition, $5.00

WE ISSUE A MONTHLY CATALOG. ARE YOU ON OUR MAILING LIST?

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RAILROAD MAP OF NEVADA—S. P. Co. 1915. Same as above on Nevada. ——$1.00

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RAILWAY SIGNALING—by Stacey E. Denny. Thorough exposition of the subject well illustrated with charts, diagrams and photos. 66 pages. New copies. ——$1.00

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SACRAMENTO NORTHERN TIMETABLE—1937. Passenger service since abandoned. Complete timetable and map giving all branch lines WITH SOUVENIR TICKET. The two items ——$1.00

We're just little people

We're just plain folks . . . but
We're the folks who made this country!
And we're the folks who will save it!

Save it from *two* things it's *got* to be saved from now. The first thing is the Enemy. The second is the danger of Prices Getting Out of Hand.

Here we are this year—after we've paid our taxes —with 131 billion bucks in our pockets.
But only 93 billion dollars' worth of goods to buy.
That leaves 38 *extra* billion dollars.

Sure, the easy thing to do is to take that 38 billion and start running around buying things we don't need, bidding against each other . . . forcing prices up and up!

Then people want higher wages. Then prices go up some more—and again wages go up. So do prices again.

And then where are we!

But us little guys—us workers, us farmers, us businessmen—are not going to take the easy way out.

We're not going to buy a single, solitary thing that we can get along without.

We're not going to ask higher wages for our work, or higher prices for the things we sell.

We'll pay our taxes willingly, without griping.

We'll pay off all our debts now, and make no new ones.

We'll *never* pay a cent above ceiling prices.
And we'll buy rationed goods only by exchanging stamps.

We'll build up a savings account, and take out adequate life insurance.

We'll buy War Bonds until it really pinches.

Heaven knows, these sacrifices are chicken feed, compared to the ones our sons are making.

Use it up...Wear it out.

Make it do...Or do without.

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by the Magazine Publishers of America.

Correspondence

I traveled from New York to Chicago on the New York Central's *Pace Maker*, which was clean and comfortable with adequate washrooms and toilet facilities. The toilets, however, were the usual size that only midgets and contortionists can get into with comfort. I have often wondered why car designers provide those inadequate cubbyholes.

Arthur J. G. Illian, New York 4, N. Y.

Mr. Kalmbach pointed out that on his trip ["Train Travel, A. D. 1943," January TRAINS] people seemed to enjoy standing on trains rather than search for an emptier coach. I fully agree with him. Every weekend here in Kenosha, I have scores of passengers for the North Shore *Electroliner*. There is hardly standing room when it reaches Kenosha. I call the passengers' attention to the fact that we operate a second section 10 minutes later, a much longer train with standard equipment, where seats are usually available. But no, they will all try and force their way into the *Electroliner* and stand all the way to Chicago.

Arthur Waehner, Agent, Kenosha, Wis.

The Rio Grande Southern right of way runs north along the sides of what appear to be sloping hills. Actually, however, this right of way is in constant danger of falling rocks and landslides. Even in these days of safe railroading the RGS has its troubles. A few months ago a trainload of about 30 cars of ore and coal got out of control on Dallas Divide. After the train and engine crews had done all they could they joined the birds. Some were laid up with broken bones, but a few were back at work in a week or two. The engine and cars piled up on a curve, rolled down the mountainside and were practically demolished.

Lewis G. Knapp, Stratford, Conn.

My grandfather used to tell a story about Jane Beacon, an old Negro woman who lived near Spruce Grove, Pa. She would walk five miles to Oxford rather than ride on Peachy [Oct. '43 TRAINS]. This was because she could not be convinced that it was safe to ride on the railroad, which was then new to the community. The trains had, from time to time, jumped the track, or a car or two had upset. Finally, however, she was convinced that it would be perfectly safe to venture a ride from Spruce Grove to Oxford. Just as the train left Spruce Grove and was rounding a sharp curve, the passenger car, which was usually attached to the rear of the train, upset. No one was hurt, but—needless to say—it was Jane's first and last ride on Peachy.

Alfred S. Harkness, Narberth, Pa.

I had the pleasure of riding the El Paso & Southwestern from Deming, N. Mex., to Douglas, Ariz., back in 1892 at the very stiff price of 7 cents per mile. While working in Douglas I enjoyed that railroad a lot. I went back to Douglas in 1939 and could find no trace of the old pike, as the rails had all been taken up and everything was Southern Pacific. Harry Jaines must have sold everything to SP or lost it all. Perhaps you can tell us about it in our magazine some time.

Homer Lytle, Altoona, Pa.

[Perhaps the road Mr. Lytle refers to was one of those which were consolidated into the El Paso & Southwestern in 1909, the year of its incorporation. This was one of Arthur Curtiss James' projects; he hoped to push it through to the Pacific Coast. When this was blocked, he sold the road to Southern Pacific in 1924 for a fortune in stocks and bonds which made him the largest individual stockholder in Southern Pacific and gave him the capital to buy Western Pacific. Then followed a strange competitive battle in which each of his railroads sought to outdo the other.—Ed.]

A Fascinating Job

Editing a magazine is one of the most fascinating jobs in the world—especially if the magazine happens to be on a subject in which you're interested. But it's a job full of a lot of tiresome and seemingly endless detail as well. Have you ever wondered how all the many articles and photos in one issue are fitted together so that they add up into even pages?

Often an article which has been carefully word-counted and slide-ruled into a definite area comes back from the composing room just three lines longer than the allotted space. Then there's a lot of head-scratching and brow-furrowing until just the right wordage can be eliminated to draw in those three lines. Sometimes we're faced with the dilemma of an article which won't fit and yet seemingly hasn't a single word anywhere which can be eliminated without changing the sense of the whole thing.

Such little details as what to capitalize are important too, and must be standardized within the magazine so that the reader isn't surprised by changes of style from one page to the next. Most magazines have their own individual style sheets specifically detailing the standards for capitalization, punctuation, use of numerals and so on. For our two magazines, TRAINS and THE MODEL RAILROADER, we have two distinct style sheets, differing according to the particular requirements of each magazine.

All these and many other details enter into the thousands of man-hours of work which go into each issue of TRAINS before it goes to press. Some of the detail seems small, but it all has a thoroughly practical purpose—to make a magazine which, as far as possible, conveys information to the reader without the reader at any time being aware of the mechanics of editing. Putting a magazine together is an infinite process of polishing off the rough spots.

Please! Renew your subscription to TRAINS early if you wish uninterrupted service. With present wartime mail service you don't get your copy of TRAINS until two to three weeks after we have mailed it, and by that time we are already making up the mailing list for the next issue. Even if you send a renewal to us by return mail after receiving your last number, there will still be some delay. That's why we include an advance notice one month before your subscription expires. Renew promptly when you get that advance notice and you'll get TRAINS right on the dot. Your subscription expiration date is given next to your address on the envelope so that you can easily check and mail us a renewal well in advance if you wish to be sure.

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RAILROAD PANORAMA

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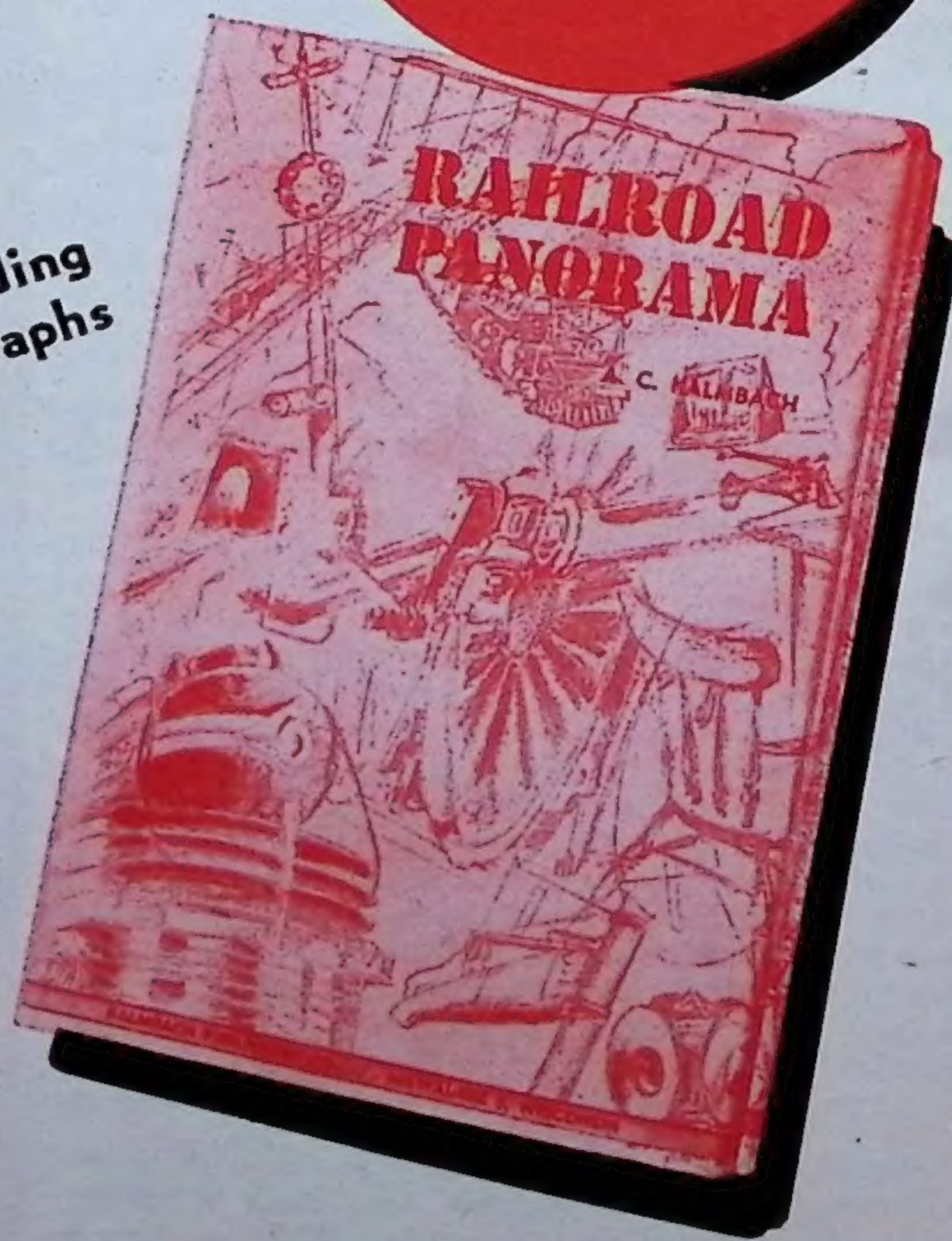

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The plodding way-freight and the colorful streamliner both come in for their bit of detailed, enthusiastic attention. That great day of May 10, 1869, when the golden spike completed the first transcontinental railroad, is recounted in every particular, and excerpts from a traveler's diary of more than a half-century ago bring to life the dangerous passage over that early ribbon of steel which bound the East and the West together.

The 5:15 commuters' rush, which the war has again brought to the front of our national consciousness, is typified by the tremendous suburban operation of the Illinois Central in Chicago, which is recounted in all its carefully timed and engineered minutiae. The luxury of modern rail travel is the story of the *Twentieth Century Limited,* and the story of the growth of a train from one man's idea into an accepted institution is the story of the *Empire State Express.* A high spot in railroad scenery and an engineering accomplishment is Horseshoe Curve. All these are chapters in *Railroad Panorama.*

Definitely not a railroad history or textbook, this is simply a readable reflection of the railroad enthusiasm of the author, an enthusiasm which will draw a sympathetic response from anyone who has ever thrilled to the sight of a steam locomotive chuffing upgrade or a fast train speeding across country with a trail of dust in its wake.

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